European Food Safety Authority; Outcome of the Public consultation on the Draft Opinion of the Scientific Panel on Dietetic products, Nutrition, and Allergies (NDA) on Dietary Reference Values for carbohydrates and dietary fibre

EFSA Publication; Tetens, Inge

Link to article, DOI:
10.2903/j.efsa.2010.1508

Publication date:
2010

Document Version
Publisher's PDF, also known as Version of record

SCIENTIFIC REPORT OF EFSA

Outcome of the Public consultation on the Draft Opinion of the Scientific Panel on Dietetic products, Nutrition, and Allergies (NDA) on Dietary Reference Values for carbohydrates and dietary fibre[1]

European Food Safety Authority[2, 3]

European Food Safety Authority (EFSA), Parma, Italy

SUMMARY

On 13 March 2009, the EFSA Panel on Dietetic products, Nutrition and Allergies (NDA) endorsed a draft Opinion on Dietary Reference Values for carbohydrates and dietary fibre to be released for public consultation. This Scientific Report summarises the comments received through the public consultation and outlines how these were taken into account in the final opinion.

EFSA had received 100 contributions from 24 interested parties (individuals, non-governmental organisations, industry organisations, academia, national assessment bodies and Member States).

The main comments which were received during the public consultation related to: total and glycaemic carbohydrates, possible adverse health effects of excessive consumption of sugar(s), sugar-sweetened beverages, the definition of dietary fibre, and the available updated evidence on the glycaemic index/glycaemic load.

All the public comments received that related to the remit of EFSA were assessed and the Opinion on Dietary Reference Values for carbohydrates and dietary fibre has been revised taking relevant comments into consideration.

1 On request from EFSA, Question No EFSA-Q-2009-00923, issued on 01 March 2010.

2 Correspondence: NDA@efsa.europa.eu

3 Acknowledgement: EFSA wishes to thank the members of the Working Group on Population Reference Intakes for the preparation of this EFSA scientific output: Carlo Agostoni, Jean-Louis Bresson, Jean-Michel Chardigny, Susan Fairweather-Tait, Albert Flynn, Ambroise Martin, Monika Neuhäuser-Berthold, Hildegard Przyrembel, John Joseph Strain, Inge Tetens, Daniel Tomé and EFSA's staff member Silvia Valtueña Martínez for the support provided to this EFSA scientific output.

Suggested citation: European Food Safety Authority; Outcome of the Public consultation on the Draft Opinion of the Scientific Panel on Dietetic products, Nutrition, and Allergies (NDA) on Dietary Reference Values for carbohydrates and dietary fibre. EFSA Journal 2010; 8(5):1508. [61 pp.]. doi:10.2903/j.efsa.2010.1508. Available online: www.efsa.europa.eu

TABLE OF CONTENTS

BACKGROUND

On 13 March 2009, the EFSA Panel on Dietetic products, Nutrition and Allergies (NDA) endorsed a draft Opinion on Dietary Reference Values for carbohydrates and dietary fibre to be released for public consultation.

The scientific advice on nutrient intakes is important as the basis of Community action in the field of nutrition; for example such advice has in the past been used as the basis of nutrition labelling. The Scientific Committee for Food (SCF) report on nutrient and energy intakes for the European Community dates from 1993.

The European Commission has asked EFSA to review and if necessary update such advice to ensure that the Community action in the area of nutrition is underpinned by the latest scientific advice. To this end the EFSA has been requested to consider the existing Population Reference Intakes for nutrients and certain other dietary components.

Furthermore, and in order to communicate effectively on nutrition and on healthy diets to the public at large, it is generally more appropriate to express recommendations for the intake of individual nutrients or substances in food-based terms. To this end EFSA has also been asked by the European Commission to provide assistance on the translation of nutrient-based dietary recommendations for a healthy diet into food-based recommendations intended for the European population as a whole.

In line with EFSA's policy on openness and transparency and in order for EFSA to receive comments from the scientific community and stakeholders on its work, EFSA engages in public consultations on key issues. The work on Dietary Reference Values (DRVs) is considered to be such an issue. Accordingly, the draft Opinion on DRVs for carbohydrates and dietary fibre was released for public consultation for ten weeks (from 5 August until 15 October 2009) on the EFSA website[4]. Stakeholders were informed and invited to submit comments.

Together with other draft Opinions on DRVs, the draft Opinion on Dietary Reference Values for carbohydrates and dietary fibre was also discussed at a National Expert Meeting with Member States on Dietary Reference Values held in Barcelona on 7 and 8 September 2009.

EFSA has committed to publish the comments received during the public consultation as well as a short report on the outcome of the consultation, taking also into account comments received by Member States during the National Expert Meeting.

COMMENTS RECEIVED

At the end of the public consultation period in October 2009 EFSA had received 100 contributions from 24 interested parties (individuals, non-governmental organisations, industry organisations, academia, national assessment bodies and Member States). All comments received were scrutinised by the NDA secretariat and subsequently compiled with reference to the contributor and the section of the draft Opinion to which the comment referred (see Appendix). Comments submitted formally on behalf of an organisation appear with the name of the organisation. The comments received by Member States during the National Expert Meeting are published in the minutes of that meeting on the EFSA website.

[4] http://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1211902045161.htm

SCREENING AND EVALUATION OF COMMENTS RECEIVED

1. General comments

In general, the comments were constructive and aimed to help improving the draft Opinion. It was noted that several contributions copied or reiterated arguments brought forward already by other organisations.

A general comment was to clarify the criteria used in the selection of literature on the health effects of carbohydrates and dietary fibre that was used in the preparation of the draft Opinion. Differences between DRVs, nutrient-based recommendations/goals and food-based dietary guidelines (and between the bases used for establishing them) were not generally acknowledged in the comments received. Clarification on the purpose of European DRVs and how these relate to national DRVs, dietary guidelines and nutrient recommendations was requested. It was also suggested to establish a time period for revision of DRVs, as well as mechanisms for the assessment of the impact of European DRVs on the diet of EU populations.

2. Specific comments

The main issues addressed in the comments received are summarised below.

Total and glycaemic carbohydrates: One of the suggestions was not to define carbohydrates that can be used for cellular metabolism as "glycaemic" because for example fructose does not have a substantial effect on glycaemia and its conversion to glucose in the liver is quantitatively low. It was suggested not to include studies on increased fruit and vegetable consumption to address the effects of total glycaemic carbohydrates on chronic disease outcomes because these effects could be confounded by factors other than carbohydrate intake. It was suggested that low fat, high carbohydrate diets could have adverse effects on chronic disease risk, and that ketosis should not be avoided in order to maintain health. A proposal was made to not indicate the range for total and glycaemic carbohydrates as recommended intake range/not to give a DRV for total glycaemic carbohydrates because the scientific evidence to derive such range was not strong.

Sugar(s), sugar-sweetened beverages: Some parties proposed to implement the part on sugars with a review of the literature available on the consequences of excessive sugar-sweetened beverage consumption on decreased nutrient density and increased energy intake, overweight, caries risk and other long-term adverse health effects. Conversely, other parties argued that, for instance, the evidence for an association between soft drink consumption and the development of obesity is not strong, neither the association between the amount of sugar consumed and the risk of dental caries. It was generally suggested to set an upper limit for sugars, though the strategies proposed were diverse. These included: a) to limit total sugar intake to up to 10 % total energy, b) to limit intake of added sugars to up to 10 % total energy, c) to limit the amount of added sugars, c) to limit consumption of sugar-containing beverages, d) to give an "as low as possible" recommendation for total sugars. It was also suggested that DRVs for sugars are not compatible with current guidelines for the treatment of chronic disease, primarily diabetes.

Dietary fibre: One of the suggestions was to update the draft Opinion with the most recent definition of dietary fibre by CODEX (step 8), with the definition of dietary fibre in EU legislation, and with the most recent definition of dietary fibre by SACN. Most comments received proposed to exclude oligosaccharides from the definition of dietary fibre for the purpose of establishing DRVs (unless an effect in bowel function is clearly demonstrated) and to define dietary fibre as that naturally occurring in foods, primarily as non-starch polysaccharides. Comments also suggested to propose the 25 g per day Adequate Intake as a "minimum" intake, to propose an adequate range of intake (e.g., 25 to 40 g per day), or even to set higher DRVs for dietary fibre based on other outcomes than bowel function

(e.g., cardiovascular disease risk). DRVs for dietary fibre were not found to be compatible with current guidelines for the treatment of chronic disease, e.g., diabetes. It was questioned why meta-analyses on the effects of whole grain foods in the prevention of type 2 diabetes were not considered. There was a suggestion not to include studies on increased fruit and vegetable consumption to address the effects of dietary fibre on chronic disease outcomes because these effects could be confounded by factors other than dietary fibre. It was proposed to give reference values for fibre for children 15 to 18 year old as for adults, since energy intake may be equivalent if not higher, and to reconsider giving reference values for children in absolute values rather than energy intake-based, since children on low-energy diets (e.g., for obesity control or for the treatment of particular disease needing low physical activity levels) would have low fibre intake as well whereas the need would rather increase. A proposal to revise the effects of phytic acid on the absorption of zinc and iron from a perspective of the impact that this factor could have on the status of the above-mentioned nutrients taking also into account the homeostatic control in response to dietary changes was made.

Glycaemic index/glycaemic load: There was a suggestion to revise evidence on the effects of low glycaemic index diets on insulin sensitivity.

INCORPORATION OF THE COMMENTS IN THE OPINION

The EFSA NDA Working Group on Population Reference Intakes (PRI) was presented with the compilation of comments and discussed them at a dedicated meeting. Many of the comments were appropriate and aimed to enhance the scientific quality and clarity of the document. These comments were taken into account and the document was revised accordingly as follows:

Total and glycaemic carbohydrates: The Panel acknowledges that studies on increased fruit and vegetable consumption cannot be used to address the effects of total glycaemic carbohydrates on chronic disease outcomes in order to set a Reference Intake Range (RI). Indeed, the RI for carbohydrates is set taking into account their effects on body weight and blood lipids, and the studies targeting consumption of particular food groups on chronic disease outcomes are only used to assess whether the proposed RI could be compatible with health. Also, and consistent with the scientific Opinion on Principles for deriving DRVs, which was amended based on the comments received during public consultation, the term "recommended intake range" has been replaced by "reference intake range".

Sugar(s), sugar-sweetened beverages: EFSA clearly states in its final Opinion that there is evidence of adverse health effects associated with certain patterns of intake of foods containing (added) sugars (e.g. strong evidence for high frequency of intake and tooth decay, some evidence for high intakes of beverages and weight gain) and that limiting the intake of (added) sugars should be considered (by relevant authorities) when establishing nutrient goals and recommendations, whereas dietary patterns of intake of foods containing added sugar should be considered when developing food-based dietary guidelines.

Dietary fibre: Annex 1 and relevant sections in the Opinion have been updated to accommodate the most recent definition of dietary fibre given by CODEX, EU legislation and SACN. An explanation on how the definition of dietary fibre in the studies addressing its effects on bowel function relates to the definition of dietary fibre given in the Opinion has been included in section 5.3.2 (gastrointestinal function). The AI for fibre in children and adolescents has been given as 2g/MJ and absolute values have been calculated based on average energy intakes for each age range. Therefore, absolute values could be adjusted for the age range 15-18 years depending on actual energy intakes. Such figures are adequate intakes for the general population of children, and are not meant for the treatment of particular conditions (e.g., obesity). Section 5.3.5 on blood pressure and section 5.3.8 on type 2 diabetes have been amended to reflect the uncertainties about an effect of dietary fibre independently of other nutrients also present in dietary sources of fibre (e.g., fruits, vegetables, whole grain cereals).

The section on mineral absorption has been deleted form the Opinion, since any effects are related to very specific fibre types and not to the main types of fibre present in a mixed diet.

Glycaemic index/glycaemic load: The section on the effects of low glycaemic index diets on glucose tolerance and insulin sensitivity has been updated including most recently available evidence.

Also, Annex 1 and Annex 2 reporting intake data for carbohydrates and dietary fibre in different European countries have been updated and re-structured to accommodate most recently published intake data.

EFSA wishes to thank all stakeholders for their contribution.

GLOSSARY / ABBREVIATIONS

DRV	Dietary Reference Value
EFSA	European Food Safety Authority
PRI	Population Reference Intake
RI	Reference Intake range for macronutrients
SACN	Scientific Advisory Committee on Nutrition
SCF	Scientific Committee on Food

APPENDIX

COMMENTS RECEIVED ON THE DRAFT OPINION RELATED TO DIETARY REFERENCE VALUES FOR CARBOHYDTRATES AND DIETARY FIBRE DURING THE PUBLIC CONSULTATION PERIOD

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Association des Amidonniers et Féculiers - AAF	4. Overview of dietary reference values and recommendations	Dear Sir or Madam, We are writing to you in order to respond to the consultation launched on 5 August with the publication of the draft Scientific Opinion on Dietary reference values for carbohydrates and dietary fibre (Question No EFSA-Q-2008-467) The AAF members welcome the work of EFSA on the setting of population reference intakes for dietary fibre which confirms the role of dietary fibre as a key nutritional component of a healthy balanced diet. In the draft opinion referred to above, the EFSA suggests a dietary reference value (DRV) of 25g/day. AAF members believe that this value is low and is the minimum value that is considered adequate for general nutrition. Published EU reference values for recommended intake of dietary fibre range from 25 - 40 g/day (based on sex and age) hence a figure of at least 30g/day would be more significant as an average recommended dietary intake for the general population. EFSA is recommending that dietary fibre intakes of 25 g/day are considered to be adequate for adults as the amount needed to maintain normal bowel function. This is just one beneficial effect of fibre intake and EFSA itself acknowledges that higher intakes may have additional benefits. Therefore, in order for consumers to be encouraged to increase their fibre intake, we would advise that a level above the minimum “adequate” value be considered at this time. It has to be recognised that as part of a varied diet, consumers have the opportunity to increase their fibre intake from a number of sources. Many of the national recommendations are based on fibre consumption data obtained from eating fruits, grains and vegetables and thus not always including added fibres obtained in functional foods such as resistant starch In conclusion, AAF members believe that a value of 30g/day would be more appropriate. However, should the consensus be that EFSA retain the DRV of 25g/day for fibre, then there should be a mechanism for this to be regularly reviewed particularly when additional consumption data and recommended intakes of further fibre components become available. We than you in advance for the attention you will devote to our comments and remain at your disposal should you need further information.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		Yours sincerely, Guglielmo Adinolfi
BEUC	3.3. Dietary fibre	As there are different types of fibre, BEUC suggests that EFSA further characterises/clarifies the type(s) of fibre they refer to in their opinion. This would also serve to reflect the comments of the NDA panel in their recent opinions on Article 13 claims. BEUC also proposes that EFSA emphasise the fact that the best source of fibre comes from natural products.
BEUC	6.2. Sugars	Given the fact EFSA have stated in the draft opinion that ""Available data do not allow the setting of an UL for total or added sugars, neither an AI nor a recommended intake range", (lines 1516-1517), BEUC wishes to have clarification as to why EFSA agreed with the Ref value of 90g sugar per day in their opinion on reference intakes. BEUC seeks clarification as to how a reference intake can be established given the fact that the NDA panel does not have sufficient data to develop dietary reference values. BEUC suggests an upper limit for added sugars should to be set at <10%E which is line with recommendations by WHO/FAO.
CEFS (Comité Européen des Fabricants de Sucre)	5.2. Sugars	I. Body Weight – 1. Line 991 There was also no evidence found for an association between sugar-sweetened beverage consumption at age 5 or 7 years and fatness at age 9 years in a cohort of British children [Johnson L, Mander AP, Jones LR, Emmett PM, Jebb SA: Is sugar sweetened beverage consumption associated with increased fatness in children? Nutrition (2007) 23: 557-563]. The notion that sugar-sweetened beverages do not induce satiety to the same extent as solid forms of carbohydrate is controversial, as a sugar-sweetened beverage and cookies suppressed hunger ratings equally and no temporal difference in satiety was observed. When it comes to energy compensation, the occasion of consumption may be more important than the physical form (solid or liquid) in which the food is consumed [Almiron-Roig E, Flores SY, Drewnowski A, No difference in satiety or in subsequent energy intakes between a beverage and a solid food, Physiol Behav. 2004; 82(4): 671- 677]. This has also been underlined in a review by Anderson, which concludes that sugars in solution reduce subsequent food intake to an extent that depends both on the quantity of sugars consumed and on the time interval before the next meal [Anderson GH, Sugars-containing beverages and postprandial satiety and food intake, Int J Obes 2006; 30: S52-S59]. Further studies compared the satiating effects of a sucrose-sweetened beverage with those of isoenergetic drinks (soft drinks, juice and 1 % fat milk) and could not find any difference in terms of satiety and energy compensation [Soenen S, Westerterp-Platenga MS, No differences in satiety or energy intake after high-fructose-corn syrup, sucrose or milk preloads, Am J Clin Nutr. 2007; 86: 1586- 1594 // Drewnowski A, Bellisle F, Liquid calories, sugar, and body weight, Am J Clin Nutr. 2007; 85: 651-661]. In a review by Pereira it has been highlighted that many studies on soft drinks have been poorly designed and the results have not been consistent. Pereira also noted the lack of high-quality intervention studies. There are also technical difficulties in assessing

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		whether individual components of the diet may be responsible for obesity, or whether obesity rather results from a general over-consumption of all sources of calories [Pereira MA, The possible role of sugar-sweetened beverages in obesity: a review of the evidence, Int J Obes 2006; 30: S28-S36]. Gibson also concluded in a recent review that sugar-sweetened soft drinks are by nature a source of energy but that there is little evidence from epidemiological studies that they are more obesogenic than any other source of energy [Gibson, S, Sugar sweetened soft drinks and obesity: a systematic review of the evidence from observational studies and interventions, Nutr Res Rev 2008; 21, 134-147]. 2. Line 993 Baak and Astrup also concluded in a recent review that there is insufficient evidence that an exchange of sugar for non-sugar carbohydrates in the context of a reduced-fat ad libitum diet or energy-restricted diet results in lower body weights [van Baak, MA, Astrup, A, Consumption of sugars and body weight, obesity reviews (2009) 10 (Suppl. 1), 9–23].
CEFS (Comité Européen des Fabricants de Sucre)	5.2. Sugars	II. Caries 1. Line 1022 The following reports show that dental caries prevalence has declined considerably. - Micheelis M, Schiffner U (Eds): Vierte Deutsche Mundgesundheitsstudie / Fourth German Oral Health Study (DMS IV). Institut der Deutschen Zahnärzte (IDZ), Deutscher Zahnärzteverlag DÄV, Köln 2006; - WHO Oral Health Country/Area Profile Programme (CAPP): http://www.whocollab.od.mah.se/euro.html 2. Line 1060 The following reviews report that the frequent consumption of all fermentable carbohydrates (whether sugars or starches) may contribute to an increased risk of dental caries, but show that the risk of caries can be minimised by regular oral hygiene and use of fluoridated toothpaste. - Anderson, CA, Curzon, MEJ, van Loveren, C, Tatsi, C, Duggal, MS, Sucrose and dental caries: a review of the evidence, obesity reviews 10 (Suppl. 1), 41–54; - König KG, Navia JM, Nutritional role of sugars in oral health, Am J Clin Nutr 1995, 62 (Suppl) S. 275-283; - König KG, Diet and oral health, Int Dent J. (2000) 50; 162-174 - van Loveren, C, Ernährung und Zahnkaries, Oralprophylaxe & Kinderzahnheilkunde, Vol 28, Nr. 2, 2006, p. 76-81.
coldiretti	1. Introduction	Coldiretti is happy to contribute to the EFSA's commitment in establishing new DRV for foods, considering the possible impact they can have - On establishing correct dietary practices,

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		- on improving use and limiting possible abuse of food, - on approaches allowing a more varied nutrition, and hence on public health at large, promoting, more than simply food safety, also the nutritional safety of our diets. - Indirectly, on the public trust about food and food producers, including issues such as scares, bias and other possible disruptors of consumers' willingness to eat healthy.
coldiretti	3. Dietary sources and intake data	3.2 and following even if consumptions along european groups may differ due to diverse method used (24 H recall, 48 H recall, direct interviews, phone intervies, etc) the lack of comparable data should not per se constitute a limit when establishing overall reccomended value of consumption. In particular, where given as a range or percentage, useful population-level reccomentations can be made. In particular, for sugars, there is enough evidence to suggest a reasonable limit of no more than 10% of the total energy daily intake.
coldiretti	5.1. Total glycemic carbohydrates	5.1.5 and 5.1.6., whereas, "850 In conclusion, data from intervention and observational studies do not show any consistent 851 relationship between the intake of total or glycaemic carbohydrate intake and the risk of CVD." With regard to the glucose metabolism, emerging evidence points to the utility of sugars intake limitation as well as high glycemic load/index in food items. In particular, Coldiretti registers that it would be of remarkable importance to collate data as submitted on the art. 13 list (ANNEX 1, literature and references about carbohydrates, p. 477 and >) and the overall work on DRV. Where trends abut Type 1 Diabetes Mellitus profile a doubled rate of the disease among children up to 5 years, environmental factors such as food- appear as the most promising cause to explain this (instead of a genetic shift in the population, unlikely due to the very rapid upsurge of T1DM). Even if not means of strong association can be outlined over sugars and health effects, there is a population-level correlation between sugar consumption and diabetes incidence (Schmidhuber, 2009). Furthermore, consumption of low- glycemic index diets has been associated with higher HDL-cholesterol concentrations and, in large cohort studies, with decreased risk of developing diabetes and cardiovascular disease . Therefore, we suggest the use of inverse association also, since the DRV are intended as the base on which build suggestions on healthy diets for the population. Furthermore, an approach based on the precaution-principle as endorsed at the EU level should be in our opinion be taken into account in order to mitigate the possible severe effects of the Diabetes on the youngest generations. In particular the WHO indication of keeping sugars < 10% of caloric intake seems appropriate even in case of lack of population-level intake data. Actually, the sugar overall consumption at the EU level is about 11%, slightly above the WHO recommendation. The average obviously conceals differences, but the target of "no more than 10%" seems quite reasonable. In particular, considering a specific Nutrient Database from FAO (Schmidhuber, 2009), from the 60es the consumption of sugars –as a general rule- increased in the

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		EU. Another reason (often underrated) for limiting the sugars DRV is the "competition" of sugars with more nutritious food items, as seems to happen at the Population level. (Schmidhuber, p. 18). A stricter effort by the public authorities on DRVs could prove to be very useful in counteracting the impact of unbalanced nutrition on exposed consumers and sensible targets in general (children). W.Ma Ronald, Chan J, Diabetse: incidence of childhood type 1 diabetes: a worryng trend, Nature Reviews Endocrinology 5, 529-530 (October 2009). See the Document at: http://www.gruppo2013.it/working-paper/Documents/La%20dieta%20europea,%20Wp%20n11%20-%20luglio%2009.pdf - Jenkins DJ et al. . Glycemic index: overview of implications in health and disease. Am J Clin Nutr. 2002 Jul;76(1):266S-73S; - Schulze MB,et al. Glycemic index, glycemic load, and dietary fiber intake and incidence of type 2 diabetes in younger and middle-aged women. Am J Clin Nutr 2004; 80:348-56 - Willett W, Manson J, Liu S. Glycemic index, glycemic load, and risk of type 2 diabetes. Am J Clin Nutr 2002; 76:274S-80S. - Liu, S, Willett, WC, Stampfer, MJ, et al. A prospective study of dietary glycemic load, carbohydrate intake, and risk of coronary heart disease in U.S. women. Am J Clin Nutr 2000; 71:1455-61. See the Document at: http://www.gruppo2013.it/working-paper/Documents/La%20dieta%20europea,%20Wp%20n11%20-%20luglio%2009.pdf
Food and Drink Federation	1. Introduction	We welcome the findings of this draft scientific opinion from EFSA as it almost completely reflects the entire body of scientific evidence in relation to sugars and health. We would, however, like to highlight some items of supporting evidence. These are included in our comments on the relevant sections of this online response form. While EFSA previously agreed that the labelling reference value for sugars are in line with the recommended upper limit of intake for added sugars that is proposed by other national authorities (The EFSA Journal (2009) 1008, 1-14), this opinion concludes that based on a review of the scientific evidence no upper limit for sugars intake can be set due to a lack of adequate data. We would urge EFSA to ensure that this current scientific opinion is reflected in other and future EFSA documents on related topics.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Food and Drink Federation	3.3. Dietary fibre	We are of the opinion that the dietary reference value (DRV) proposed for dietary fibre of 25g/day is the absolute minimum value that is considered adequate for general nutrition. Published EU reference values for recommended intake of dietary fibre range from 25 - 38 g/day (based on sex and age) for the general population. EFSA are recommending that dietary fibre intakes of 25 g/day are considered to be adequate for adults as the amount needed to maintain normal bowel function. This is just one beneficial effect of fibre intake and EFSA acknowledge that higher intakes may have additional benefits. Hence, in order for consumers to be encouraged to increase their fibre intake, we would advise that a level above the minimum "adequate" value be considered at this time. It has to be recognised that as part of a varied diet, consumers have the opportunity to increase their fibre intake from a number of sources. Many of the national recommendations are based on fibre consumption data obtained from eating fruits, grains and vegetables and thus not always including added fibres obtained functional foods, e.g. desired intake levels for dietary fibres such as resistant starch are recommended to be in the region of 17 - 20g/day. If the consensus is that EFSA retain the DRV of 25g/day for fibre, then there should be a mechanism for this to be regularly reviewed particularly when additional consumption data and recommended intakes of further fibre components become available.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Food and Drink Federation	5.2. Sugars	We would like to highlight some items of supporting evidence to be included in this section of the document. Section 5.2.5 Body weight Line 991 A review of the evidence by Pereira (2006) concluded that there was a lack of adequately designed intervention studies on the relationship between soft drink consumption and risk of obesity. Many studies were poorly designed and methodologies were inconsistent. A further recent review (Gibson, 2008) concluded that sugar-sweetened soft drinks are source of energy and there is little evidence from epidemiological studies that they increase the risk of obesity more than any other source of energy. References Gibson S. Sugar sweetened soft drinks and obesity: a systematic review of the evidence from observational studies and interventions. Nutrition Research Reviews 2008; 21: 134-147. Pereira MA. The possible role of sugar-sweetened beverages in obesity: a review of the evidence. International Journal of Obesity 2006; 30: S28-S36. Section 5.2.7 Dental Caries Line 1064 A review of all the evidence (from 1856-2007) found the majority of studies did not find a relationship between the amount of sugar consumed and dental caries. The frequency of consumption may be important, however the effects of fluoride toothpaste, good oral hygiene and health education, may override the effects of food alone on tooth decay. References Anderson CA, Curzon MEJ, van Loveren C, Tatsi C, & Duggal MS. Sucrose and dental caries: a review of the evidence. Obesity Reviews 2009; 10 (Suppl. 1): 41–54.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Food and Drink Federation	5.3. Dietary fibre	We are of the opinion that the dietary reference value (DRV) proposed for dietary fibre of 25g/day is the absolute minimum value that is considered adequate for general nutrition. Published EU reference values for recommended intake of dietary fibre range from 25 - 38 g/day (based on sex and age) for the general population. EFSA are recommending that dietary fibre intakes of 25 g/day are considered to be adequate for adults as the amount needed to maintain normal bowel function. This is just one beneficial effect of fibre intake and EFSA acknowledge that higher intakes may have additional benefits. Hence, in order for consumers to be encouraged to increase their fibre intake, we would advise that a level above the minimum "adequate" value be considered at this time. It has to be recognised that as part of a varied diet, consumers have the opportunity to increase their fibre intake from a number of sources. Many of the national recommendations are based on fibre consumption data obtained from eating fruits, grains and vegetables and thus not always including added fibres obtained functional foods, e.g. desired intake levels for dietary fibres such as resistant starch are recommended to be in the region of 17 - 20g/day. If the consensus is that EFSA retain the DRV of 25g/day for fibre, then there should be a mechanism for this to be regularly reviewed particularly when additional consumption data and recommended intakes of further fibre components become available.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Food and Drink Federation	6.2. Sugars	We would like to highlight some items of supporting evidence to be included in this section of the document. Section 5.2.5 Body weight Line 991 A review of the evidence by Pereira (2006) concluded that there was a lack of adequately designed intervention studies on the relationship between soft drink consumption and risk of obesity. Many studies were poorly designed and methodologies were inconsistent. A further recent review (Gibson, 2008) concluded that sugar-sweetened soft drinks are source of energy and there is little evidence from epidemiological studies that they increase the risk of obesity more than any other source of energy. References Gibson S. Sugar sweetened soft drinks and obesity: a systematic review of the evidence from observational studies and interventions. Nutrition Research Reviews 2008; 21: 134-147. Pereira MA. The possible role of sugar-sweetened beverages in obesity: a review of the evidence. International Journal of Obesity 2006; 30: S28-S36. Section 5.2.7 Dental Caries Line 1064 A review of all the evidence (from 1856-2007) found the majority of studies did not find a relationship between the amount of sugar consumed and dental caries. The frequency of consumption may be important, however the effects of fluoride toothpaste, good oral hygiene and health education, may override the effects of food alone on tooth decay. References Anderson CA, Curzon MEJ, van Loveren C, Tatsi C, & Duggal MS. Sucrose and dental caries: a review of the evidence. Obesity Reviews 2009; 10 (Suppl. 1): 41–54.
Food Standards Agency	1. Introduction	In EFSA opinions it is not always clear how evidence has been identified for inclusion. EFSA should consider including a section detailing the methodology used to review the scientific evidence which would provide a more transparent approach and more comprehensive review of the literature. This should include how they selected the studies to include and how study quality was assessed. The Scientific Advisory Committee on Nutrition (SACN) who advise the UK FSA is currently undertaking a review of carbohydrates and health which includes several independently commissioned reviews. The Agency would be prepared to share the findings from these comprehensive systematic reviews with EFSA once SACN's report is complete in late 2011. NDA may like to consider delaying the revision of their DRVs to enable them to make use of these comprehensive reviews.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Food Standards Agency	2. Definition/category	Section 2.1.2 Dietary fibre The draft EU definition as quoted in this paper includes oligosaccharides including FOS and GOS which have as yet to be shown to have a physiological effect. It is essential that the definition of dietary fibre takes into account the physiological effects of each of the components to be included in the 'fibre' definition. The SACN definition (see www.sacn.gov.uk) which is missing from Annex 1 in the EFSA opinion considered individual fibre components based on physiological effect. It states that "it still needs to be proven that specific fibre components such as oligosaccharides have an independent effect and that it is potentially misleading to include non intrinsic fibre in the definition in the absence of other evidence". SACN opinion is based on an independent review of the literature looking at each individual component considered for inclusion in the fibre definition. SACN were unable to identify literature supporting physiological effects of oligosaccharides and so it is misleading to include them in the definition.
Food Standards Agency	5. Criteria (endpoints) on which to base the dietary reference values	Section 5.25 Sugar and Body weight Although the evidence is inconsistent for sugar and sugar sweetened drinks and body weight and based on a hierarchy of evidence approach many of the studies are lower quality evidence (eg cross sectional studies) it should be possible to recommend a guidance level (if it is not possible to set a UL) for sugar as this is such an important public health issue. The reviews cited in the EFSA opinion (Malik et al 2006 and Vartanian et al 2007) include mainly cross sectional and longitudinal studies although the study by Malik et al also cites 10 prospective studies. In addition WHO (2003) reported concluded that high intake of sugars in beverages probably promote weight gain. We would suggest that on balance the literature suggest that a guidance level should be set. We appreciate that EFSAs role is risk assessment but they should still be able to make a recommendation to the risk managers at the Commission to guide the policymakers who are not scientific experts in this area and so rely on EFSA to provide technical/ scientific advice. WHO set a level for free sugar of <10% of total energy and FSA would support a DRV for added sugar with an upper limit of 10% of total energy intake.
Food Standards Agency	5.2. Sugars	Section 5.2.7 Sugar and Dental caries The evidence base quoted is out of date and does not include a recent systematic review published in March 2009. This reviewed the literature between 1856-1966 (hand searching) and 1966-2007 (electronic searches). Anderson CA,et al (2009) Sucrose and dental caries: a review of the evidence. Obesity reviews 10(Supp) 41-54. Although recent evidence showing that the link between sugar and dental caries is most likely to be due to frequency of sugar consumption rather than quantity of sugar, it seems unacceptable not to set an upper level . This is of particular concern considering that the Commission are setting a LRV of 90g/day for labelling purposes and EFSA have produced an opinion endorsing this level. There needs to be some way of linking ULs to LRVs especially as the LRV may be viewed as a target rather than an upper level by some sectors. Vulnerable groups are at greater risk of dental caries where poor oral hygiene and lack of water fluoridation together with sugar consumption contribute to the need for an RNI to protect the vulnerable groups.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Food Standards Agency	5.2. Sugars	Section 5.25 Sugar and Body weight Although the evidence is inconsistent for sugar and sugar sweetened drinks and body weight and based on a hierarchy of evidence approach many of the studies are lower quality evidence (eg cross sectional studies) it should be possible to recommend a guidance level (if it is not possible to set a UL) for sugar as this is such an important public health issue. The reviews cited in the EFSA opinion (Malik et al 2006 and Vartanian et al 2007) include mainly cross sectional and longitudinal studies although the study by Malik et al also cites 10 prospective studies. In addition WHO (2003) reported concluded that high intake of sugars in beverages probably promote weight gain. We would suggest that on balance the literature suggest that a guidance level should be set. We appreciate that EFSAs role is risk assessment but they should still be able to make a recommendation to the risk managers at the Commission to guide the policymakers who are not scientific experts in this area and so rely on EFSA to provide technical/ scientific advice. WHO set a level for free sugar of <10% of total energy and FSA would support a DRV for added sugar with an upper limit of 10% of total energy intake.
Food Standards Agency	5.3. Dietary fibre	5.3.10 colorectal cancer The use of the term 'might' to describe evidence is very vague and is not consistent with terms used for defining evidence such as those used by WHO, WCRF etc. EFSA should consider using the convincing, probable, limited-suggestive etc which was used by WHO and recently updated by the WCRF expert panel (2007) to take onboard new approaches to reviewing evidence. EFSA need to fully evaluate the evidence for any suggested effects of micro flora on colonic function/ colorectal cancer as it is not clear that fermentation by the gut microflora have any demonstratable systemic effect on the host. The evidence for an effect of fermentation products such as butyric acid on risk of colorectal cancer is mainly limited to in vitro studies and in vivo studies in laboratory animals. When SACN looked at fibre components in relation to colorectal cancer they concluded: "The findings suggest that increased overall fibre intake may reduce colorectal cancer risk; however further evidence is required to confirm this observation. On balance, due to the paucity of data and inconsistent findings, there is not enough evidence to conclude whether specific forms of fibre intake have an association with the risk of colorectal cancer or adenoma." Their background paper and statement can be found at http://www.sacn.gov.uk/reports_position_statements/reports/narrative_synthesis_of_health_effects_of_potential_dietary_fibre_components_-_13th_october_2008.html
Food Standards Agency	5.3. Dietary fibre	5.3.9 Mineral absorption The EFSA opinion states that "phytic acid that occurs together with dietary fibre.....may inhibit uptake of iron and zinc". Evidence reviews by SACN in their draft report on Iron and Health suggests that this may not be the case. This is because most of the evidence for the effects of phytic acid on iron uptake is from single meal absorption studies and does not take into account adaptive absorption and homeostasic responses over time to qualitative and quantitative changes in the diet. Whole diet studies suggest that these single meal studies over estimate effects of enhancers and inhibitors on iron absorption. The SACN draft report on Iron and Health can be found at http://www.sacn.gov.uk/reports_position_statements/index.html

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Food Standards Agency	5.3. Dietary fibre	Section 5.3 Dietary fibre Only a very limited selection of the literature is quoted whereas a systematic review of the evidence for all of the components included in the dietary fibre definition is required. Studies specifically looking at the evidence in relation to components such as FOS, GOS and resistant starch are missing. 5.3.3 line 1110 states that " effects on lipid metabolism of resistant starch and resistant oligosaccharides demonstrated in experimental animals have so far not been reproduced in man" This statement suggest that these so called fibre components do not have the same effect as other fibre components such as NSP on serum lipids. So why are these included in a definition that would allow these components to be labelled as fibre? As EFSA are using the EU definition which includes resistant starch and oligosaccharides they need to review all the literature in relation to these components and not just the literature for a 'mixed fibre diet'
Food Standards Agency	Conclusions and recommendations	Conclusions and recommendations This section will require further review once the evidence base has been comprehensively reviewed. We hope to see a DRV for sugar in the revised draft. Line 1514 says children from 1-2 years which is inconsistent with the summary table which states from 1 years. On a general point numbers under ten are usually written out in full eg one as opposed to 1. Concerns that with the current fibre definition the 25g/day may be made up mainly of so called fibre components which do not have the same physiological effect as traditional fibre components such as NSP.
Food Standards Agency	Conclusions and recommendations	Glossary In the glossary/ abbreviations section , terms need to be clearly defined. Annex 1 The UK Scientific Advisory Committee on Nutrition (SACN) definition of dietary fibre is missing from this section summarising member states definitions.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
German Federation for Food Law and Food Science, Godesberger Allee 142-148, 53175 Bonn	5. Criteria (endpoints) on which to base the dietary reference values	Chapter 5.2 – Sugars 5.2.7 Dental caries Line 1022: The following reports support that the caries prevalence has declined considerably: - Micheelis M, Schiffner U (Eds): Vierte Deutsche Mundgesundheitsstudie / Fourth German Oral Health Study (DMS IV). Institut der Deutschen Zahnärzte (IDZ), Deutscher Zahnärzteverlag DÄV, Köln 2006 - WHO Oral Health Country/Area Profile Programme (CAPP): http://www.whocollab.od.mah.se/euro.html Line 1060: The following reviews support that the frequent consumption of all fermentable carbohydrates (sugars and starches) may contribute to an increased risk of dental caries, but the risk of caries can be minimised by regular oral hygiene and the use of fluoridated dentifrice. - Anderson, CA, Curzon, MEJ, van Loveren, C, Tatsi, C, Duggal, MS, Sucrose and dental caries: a review of the evidence, obesity reviews 10 (Suppl. 1), 41–54 - König KG, Navia JM, Nutritional role of sugars in oral health, Am J Clin Nutr 1995, 62 (Suppl) S. 275-283. - König KG, Diet and oral health, Int Dent J. (2000) 50; 162-174 - van Loveren, C, Ernährung und Zahnkaries, Oralprophylaxe & Kinderzahnheilkunde, Vol. 28, Nr. 2, 2006, p. 76-81
German Federation for Food Law and Food Science, Godesberger Allee 142-148, 53175 Bonn	5. Criteria (endpoints) on which to base the dietary reference values	Chapter 5.2 – Sugars I. Body Weight – 2. Line 993 Baak and Astrup also concluded in a recent review that there is insufficient evidence that an exchange of sugar for non-sugar carbohydrates in the context of a reduced-fat ad libitum diet or energy-restricted diet results in lower body weights [van Baak, MA, Astrup, A, Consumption of sugars and body weight, obesity reviews (2009) 10 (Suppl. 1), 9–23].

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
German Federation for Food Law and Food Science, Godesberger Allee 142-148, 53175 Bonn	5. Criteria (endpoints) on which to base the dietary reference values	I. Body Weight – 1. Line 991 There was also no evidence found for an association between sugar-sweetened beverage consumption at age 5 or age 7 years and fatness at age 9 years in a cohort of British children [Johnson L, Mander AP, Jones LR, Emmett PM, Jebb SA: Is sugar sweetened beverage consumption associated with increased fatness in children? Nutrition (2007) 23: 557-563]. The notion that sugar sweetened beverages do not induce satiety to the same extent as solid forms of carbohydrate is controversial, as a sugar sweetened beverage and cookies suppressed hunger ratings equally and no temporal difference in satiety was observed. When it comes to energy compensation, the occasion of consumption may be more important than the physical form (solid or liquid) in which the food is consumed [Almiron-Roig E, Flores SY, Drewnowski A, No difference in satiety or in subsequent energy intakes between a beverage and a solid food, Physiol Behav. 2004; 82(4): 671- 677]. This has also been underlined in a review by Anderson, which concludes that sugars in solution reduce subsequent food intake to an extent that depends both on the quantity of sugars consumed and on the time interval before the next meal [Anderson GH, Sugars-containing beverages and postprandial satiety and food intake, Int J Obes 2006; 30: S52-S59]. Further studies compared the satiating effects of a sucrose-sweetened beverage with those of isoenergetic drinks (softdrinks, juice and 1 % fat milk) and could not find any difference in terms of satiety and energy compensation [Soenen S, Westerterp-Platenga MS, No differences in satiety or energy intake after high-fructose-corn syrup, sucrose or milk preloads, Am J Clin Nutr. 2007; 86: 1586- 1594 // Drewnowski A, Bellisle F, Liquid calories, sugar, and body weight, Am J Clin Nutr. 2007; 85: 651-661]. In a review by Pereira it has been highlighted that many studies on softdrinks have been poorly designed and the results have not been consistent. Pereira also noted the lack of high-quality intervention studies. There are also technical difficulties in assessing whether individual components of the diet may be responsible for obesity, or that obesity results from a general over-consumption of all sources of food energy [Pereira MA, The possible role of sugar-sweetened beverages in obesity: a review of the evidence, Int J Obes 2006; 30: S28-S36]. Gibson also concluded in a recent review that sugar-sweetened soft drinks are by nature a source of energy but there is little evidence from epidemiological studies that they are more obesogenic than any other source of energy [Gibson, S, Sugar sweetened soft drinks and obesity: a systematic review of the evidence from observational studies and interventions, Nutr Res Rev 2008; 21, 134-147].

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
German Nutrition Society (DGE)	5.2. Sugars	Line 897: To maintain body weight an energy consumption of 1900 - 2400 kcal is adequate for a population with a sedentary lifestyle. Added sugars are consumed by energy-dense, nutrient-poor foods, sometimes in combination with fat or even alcohol. Calculation 20-25 EN% as sugars 1400 – 1800 kcal or less are left to satisfy the requirements of essential nutrients! If the NDA-Panel only deduce numbers with evidence based background it is not comprehensible to say that 20-25 Energy% are allowed. Line 995: "might" is absolutely not iustified considering the data available. "does" is the correct wording. Line: 1070 See line 995
German Nutrition Society (DGE)	5.3. Dietary fibre	Line 1324: Here we have a simple mathematical problem. Looking at the different described endpoints we find 30 g /d for impaired glucose control (line 1096), 26 g /d (>3.1 g/MJ) for maintaining body weight (line 1170), 25 – 30 g/d for lower risk of diabetes (line 1190), 28.9 (3.4g /MJ) for lower risk of CHD, 25 g/d for normal gastrointestinal function (line 1239) and 26 – 45 g/d for prevention of colon cancer.
German Nutrition Society (DGE)	6.2. Sugars	Lines 1483, 1485, 1487: "might" is again the wrong wording and to be replaced by "does" Line 1488: Even if the Panel does not see a basis for an UL, then it should at least use the formulation like for TFA: "as low as possible in a nutritionally adequate diet". A limitation is necessary.
German Nutrition Society (DGE)	Conclusions and recommendations	Fibre: Here we have a simple mathematical problem. Looking at the different described endpoints we find 30 g /d for impaired glucose control (line 1096), 26 g /d (>3.1 g/MJ) for maintaining body weight (line 1170), 25 – 30 g/d for lower risk of diabetes (line 1190), 28.9 (3.4g /MJ) for lower risk of CHD, 25 g/d for normal gastrointestinal function (line 1239) and 26 – 45 g/d for prevention of colon cancer (line 1324). The mean or the median value would in any case be higher than the 25 g/d considered adequate for adults by the Panel (line 1527). This low number is used in spite the Panel himself stated, that there is evidence of benefit to health in adults associated with dietary fibre intakes greater than 25 g/d (line 1525).

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
German Nutrition Society (DGE)	References	The convincing negative effects of high sugar consumption have been recently presented and discussed by a Scientific Statement of the American Heart Association [Johnson RK et al.: Dietary Sugars Intake and Cardiovascular Health. A Scientific Statement From the American Heart Association. Circulation published online Aug 24, 2009]. This Statement should be examined more closely by the Panel.
Heart of Mersey	1. Introduction	Lines 175 – 196: Heart of Mersey (HoM) welcomes the opportunity to respond to the current consultation on draft dietary reference values for nutrients. We recognise the importance of EFSA's contribution to harmonisation of DRV's across Europe. HoM acknowledges there are difficulties in establishing DRV's when considering their potential use and possible misinterpretation e.g. whether they are to be used for developing population goals in relation to appropriate dietary composition, food labelling purposes, to interpret dietary information for individuals or sub groups within the population. For example the previous RDA's developed in the UK in 1979 (were established as average amounts of a nutrient which should be provided per head in a group of people if the needs of practically all members of the group are to be met) had many disadvantages in that they were used inappropriately, had a limited degree of accuracy, a single figure was open to misinterpretation and they were wrongly used to assess the adequacy of an individual's diet. If establishing DRV's for energy, fats , fatty acids, sugars and starches it needs to be considered that at higher levels of consumption there is likely to be evidence of undesirable effects and for this purpose reasonable parameters or values need to be established. HoM acknowledge that the current UK DRV's need to be reviewed. For the purpose of this consultation and given the importance of DRVs for a variety of applications, as stated above, where the evidence is insufficient, EFSA should adopt a precautionary approach and develop the best estimates based on the available evidence.
Heart of Mersey	Conclusions and recommendations	Lines 1516 – 1517: Available data do not allow the setting of an UL for total or added sugars, neither an AI nor a recommended intake range. HoM is concerned that a value for 'added sugars' has not been considered. Intakes of NME sugars among pre-school children in Britain are higher than recommended. According to a national survey, children between 1 and 4 years in Britain obtain about 20% of energy from NME sugars, which is twice the current recommendation. Advice in Scotland recommends no more than 11% of food energy for children aged 1-5 years.(For adults in the Uk this is 10% of energy).Diets high in sucrose are also associated with higher levels of blood triglycerides and lower HDL cholesterol, which both increase the risk of heart disease. HoM strongly recommends that EFSA adopt a precautionary approach and set a DRV of less than 10%E from added sugars until sufficient evidence emerges to support the contrary.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Heart of Mersey	Conclusions and recommendations	Lines 1519 – 1529: Based on the available evidence on bowel function, the Panel considers dietary fibre intakes of 25 g/day to be adequate for normal laxation in adults. The Panel considers that the AI for dietary fibre for children should be based on that for adults with appropriate adjustment for energy intake. The Panel notes that there is evidence in adults of benefit to health associated with consumption of diets rich in fibre-containing foods at dietary fibre intakes greater than 25 g/d e.g. reduced risk of coronary heart disease and type 2 diabetes and weight maintenance. SACN (the UK advisory committee on nutrition) position statement on dietary fibre highlights the effects of different types of dietary fibre on lipid profiles. It is suggested that soluble fibre, particularly that from oats is effective in lowering total cholesterol and LDL cholesterol. (67 studies summarised in a meta-analysis by Brown L, Rosner B, Willet WW and Sacks FM, 1999, cholesterol –lowering effects of dietary fibre: a meta-analysis, Am J Clin Nut, 60 (5), 567 -72.)HoM strongly supports an AI for dietary fibre for both adults and children.
International Diabetes Federation, European Region	5. Criteria (endpoints) on which to base the dietary reference values	Regarding the public consultation about the EFSA draft scientific opinion on "Dietary reference values for carbohydrate and dietary fibre", particularly with regard to diabetes (glucose tolerance, insulin sensitivity), dyslipidaemia, blood pressure and cardiovascular disease we would like to highlight the following aspects: The recommended intakes for carbohydrate (45-60 E%) and fibre (25g/day or more to exploit health benefits e.g. reduced risk of coronary heart disease, implaired glucose tolerance and type 2 diabetes, reduced total and LDL-cholesterol and blood pressure are in line with current evidence-based nutrition recommendations of Diabetes Associations to prevent type 2 diabetes and to treat individuals with type 1 and type 2 diabetes. With regard to dietary fibre it may be a problem to distinguish between naturally occuring fibre in foods and added synthetic fibre to foods. The latter have so far not been demonstrated to have health benefits like natural dietary fibre and therefore advice to consume this kind of fibre is not really proven. A further problem is that sugar alcohols (like sorbitol, xylitol, mannitol and lactitol) are now included in the term "carbohydrates". For persons with diabetes it would be helpful to be able to distuinglish between typical carbohydrates (starch etc.) and those from sugar alcohols on food labels since this may have impact on glycaemic response. Although the EFSA Scientific Panel concludes that there is not sufficient evidence for setting upper limits for sugar, the current recommendations of Diabetes Associations not to exceed 10 E%/day in form of free sugars for those with diabetes, which is also recommended by WHO for the general population, should be sustained in the advice for persons with type 1 and type 2 diabetes. In addition, for individuals with diabetes possible favourable effects of a reduced glycaemic index or glycaemic load diet on serum lipid levels and glycaemic control should be included the nutritional advice, even though general food labelling which would contain numbers for the glycaemic index or load seems not to be practical. Overall the EFSA draft is well-designed and relevant references are provided. Interestingly the dietary intake data in the end of

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		the draft show, that on average, dietary fibre intake in most countries is markedly less than recommended. About IDF Europe As the only European advocate for people with diabetes and their healthcare providers, the International Diabetes Federation European Region (IDF Europe) works together with its member associations and other diabetes stakeholders to enhance the lives of people with diabetes. IDF Europe has more than 62 diabetes associations in 43 countries in its membership. Many of these associations are made up of both people with diabetes and healthcare professionals. The mission of the International Diabetes Federation is to promote diabetes care, prevention and a cure worldwide. For further information, please see: www.idf-europe.org.
National Center of Public Health Protection	5.1. Total glycemic carbohydrates	Additionally some technical aid: Line 751: "..insuline" - should become "..insulin"
National Center of Public Health Protection	5.1. Total glycemic carbohydrates	Line 690: Since in the Section 2 Definition / Category, 2.1. Categories - only three categories are introduced, ie Glycaemic carbohydrates, Dietary fibre and Total carbohydrates, concerning sugars and starches for Glycaemic CHO and "by difference" for Total CHO, is it more correct the Title of the Chapter 5.1. - "Total glycaemic carbohydrates" to be changed and to become "Total and Glycaemic Carbohydrates" as the criteria for formulation the DRV are based on scientific data not differentiating between total and glycaemic carbohydrates and such category as "total glycaemic carbohydrates" has not been introduced in Section 2 - Categories?
National Center of Public Health Protection	5.1. Total glycemic carbohydrates	Line 703-704: The citation (IoM 2005) should be more precise, since such structure of the formulation "..cells in CNS, RBC and some other cells dependent on anaerobic glycolysis.." implies that all these cells relate to anaerobic glycolysis, (not that brain - 2% BW but 20% of total oxygen uptake, opposite to anaerobic retina and lens metabolism). May be it would be more correctly understandable if the citation is as it states in IoM - "The only cells that have an absolute requirement for glucose as an oxidizable fuel are those in the central nervous system (i.e., brain) and those cells that depend upon anaerobic glycolysis, such as red blood cells...".
National Center of Public Health Protection	5.2. Sugars	Additionally some technical aid: Line 892 and Line 894 : .."wheras" should become "whereas"

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
National Center of Public Health Protection	5.3. Dietary fibre	Lines 1311, 1312 and 1316: The abbreviation WCFR is not correct - it should become WCRF (ie World Cancer Research Fund).
National Center of Public Health Protection	References	Additionally some technical aid: In Annex 1 - Line 2312 : Citation IoM 2005 - second row : ...."..b-" should become .."beta-" In Annex 5 - Line 2336 : Citation Reiser et al - third column : ..."..insulemic.." should become .."..insulinemic.."
National Center of Public Health Protection	References	The presentation of references should be put under unification, eg: Line 1585 - Am.J.Clin.Nutr. 61 (suppl): 930S-937S. - and Line 1594 - Am J Clin Nutr 33 (12), 2657 - 61. - are different patterns of presentations. This concerns all citations of scientific journals in the section References. The unification should concern a choice of options - abbreviations of the names of Journals - (usually without dots), after the number of the volume - comma or :, and the last page - shortened or full number.
National Heart Forum	1. Introduction	Dietary fibre: we recommend that complex carbohydrates and dietary fibre should be linked, so that the recommendation clearly states that complex carbohydrates should be consumed in the form of whole grain rather than refined forms, and dietary fibre derived from naturally occurring sources rather than isolated from its source.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
National Heart Forum	1. Introduction	The National Heart Forum (NHF) welcomes the process of developing Dietary Reference Values (DRVs) for nutrients. We agree that DRVs can be used for a variety of purposes including diet assessment and planning, providing reference values in food labelling, in establishing food-based dietary guidelines (FBDG) as well as nutrient profiles. We consider EFSA's work of essential and necessary for harmonising DRVs and FBDGs as much as possible across Europe. However, the European level guidelines, while useful, should not supersede existing dietary guidelines at the country level. EFSA should clarify the purpose of the European DRVs in relation to national dietary guidelines. Given the importance of DRVs for a wide variety of applications, we recommend that in instances where the evidence is insufficient, EFSA should adopt a precautionary approach and develop the best estimates based on the available evidence. We recommend that EFSA define a clear time-period over which the DRVs will apply eg 10 years. EFSA should also set time-scales for the evaluation of the effectiveness of the DRVs on improving the diet of the European population, after which they should be revised.
National Heart Forum	1. Introduction	We would like to know whether EFSA has consulted national bodies that have developed DRVs in European countries such as the UK Scientific Advisory Committee on Nutrition, and recommend that it does so in the development of the European DRVs.
National Heart Forum	2. Definition/category	Dietary fibre: we recommend that complex carbohydrates and dietary fibre should be linked, so that the recommendation clearly states that complex carbohydrates should be consumed in the form of whole grain rather than refined forms, and dietary fibre derived from naturally occurring sources rather than isolated from its source.
National Heart Forum	2. Definition/category	The National Heart Forum (NHF) welcomes the process of developing Dietary Reference Values (DRVs) for nutrients. We agree that DRVs can be used for a variety of purposes including diet assessment and planning, providing reference values in food labelling, in establishing food-based dietary guidelines (FBDG) as well as nutrient profiles. We consider EFSA's work of essential and necessary for harmonising DRVs and FBDGs as much as possible across Europe. However, the European level guidelines, while useful, should not supersede existing dietary guidelines at the country level. EFSA should clarify the purpose of the European DRVs in relation to national dietary guidelines. Given the importance of DRVs for a wide variety of applications, we recommend that in instances where the evidence is insufficient, EFSA should adopt a precautionary approach and develop the best estimates based on the available evidence. We recommend that EFSA define a clear time-period over which the DRVs will apply eg 10 years. EFSA should also set time-scales for the evaluation of the effectiveness of the DRVs on improving the diet of the European population, after which they should be revised.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
National Heart Forum	3.3. Dietary fibre	Dietary fibre: we recommend that complex carbohydrates and dietary fibre should be linked, so that the recommendation clearly states that complex carbohydrates should be consumed in the form of whole grain rather than refined forms, and dietary fibre derived from naturally occurring sources rather than isolated from its source.
National Heart Forum	4. Overview of dietary reference values and recommendations	Dietary fibre: we recommend that complex carbohydrates and dietary fibre should be linked, so that the recommendation clearly states that complex carbohydrates should be consumed in the form of whole grain rather than refined forms, and dietary fibre derived from naturally occurring sources rather than isolated from its source.
National Heart Forum	4. Overview of dietary reference values and recommendations	Lines 1516-7 Sugar: "Available data do not allow the setting of an UL for total or added sugars, neither an AI nor a recommended intake range." We do not agree (see arguments below) Line 541: Section 4: "Overview of dietary reference values & recommendations." Added Sugars should have their own section as opposed to being included with total carbohydrates in the way that they received separate attention in line 558 and Section 5: Line 853. Line 680-681: include dental caries as an endpoint [see lines 1020-21; lines1029-1031 and lines 1069-1071]. Lines 1484-1489: We agree that an upper limit for added sugars (non-milk extrinsic sugars) cannot be set, not because of insufficient data, but because there is no physiological need for added sugars. The draft opinion paper has identified substantial evidence for a detrimental effect of excessive sugar intakes on a variety of significant end-points including: bodyweight [lines 963-965, lines 980-83, lines 985-988]; type 2 diabetes [lines 1002 – 1005] and dental caries [eg lines 1020-21; 1029-1031]. It has also identified evidence that sugar-sweetened beverages do not induce satiety to the same extent as solid forms of carbohydrate, and that sugar-sweetened beverages contribute to weight gain [lines 993-996]. Furthermore, frequent consumption patterns of foods with added sugars are associated with a low nutrient density of diets [lines 880 to 882]; this has significant implications for the development of food-based dietary guidelines. The conditions which are associated with high intakes of added sugars (and foods containing them) are of major public health concern in Europe. Given the importance of DRVs for a variety of purposes (including assessment and planning of diets, developing FBDG, food labeling, nutrient profiles and evaluating progress), EFSA should come up with the best DRV estimates based on the available evidence. A number of existing guidelines including the WHO, Nordic countries, UK and Eurodiet recommend an upper limit for added sugars less than 10%E [line 558]. Eurodiet equates this target with a corresponding food-based guideline consumption level of less than 4 occasions per day [line 558]. In view of the fact that action on diets is required now, and there is no evidence for a harmful effect of lower added sugar intakes

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		on health, we strongly recommend that EFSA adopt a precautionary approach and set a DRV of less than 10%E from added sugars until sufficient evidence emerges to support the contrary. Annexes 2 & 3: There has been a notable omission of data on intakes of added sugars (non-milk extrinsic sugars) among children and adults in Europe. We strongly recommend this is included.
National Heart Forum	5. Criteria (endpoints) on which to base the dietary reference values	Lines 1516-7 Sugar: "Available data do not allow the setting of an UL for total or added sugars, neither an AI nor a recommended intake range." We do not agree (see arguments below) Line 541: Section 4: "Overview of dietary reference values & recommendations." Added Sugars should have their own section as opposed to being included with total carbohydrates in the way that they received separate attention in line 558 and Section 5: Line 853. Line 680-681: include dental caries as an endpoint [see lines 1020-21; lines1029-1031 and lines 1069-1071]. Lines 1484-1489: We agree that an upper limit for added sugars (non-milk extrinsic sugars) cannot be set, not because of insufficient data, but because there is no physiological need for added sugars. The draft opinion paper has identified substantial evidence for a detrimental effect of excessive sugar intakes on a variety of significant end-points including: bodyweight [lines 963-965, lines 980-83, lines 985-988]; type 2 diabetes [lines 1002 – 1005] and dental caries [eg lines 1020-21; 1029-1031]. It has also identified evidence that sugar-sweetened beverages do not induce satiety to the same extent as solid forms of carbohydrate, and that sugar-sweetened beverages contribute to weight gain [lines 993-996]. Furthermore, frequent consumption patterns of foods with added sugars are associated with a low nutrient density of diets [lines 880 to 882]; this has significant implications for the development of food-based dietary guidelines. The conditions which are associated with high intakes of added sugars (and foods containing them) are of major public health concern in Europe. Given the importance of DRVs for a variety of purposes (including assessment and planning of diets, developing FBDG, food labeling, nutrient profiles and evaluating progress), EFSA should come up with the best DRV estimates based on the available evidence. A number of existing guidelines including the WHO, Nordic countries, UK and Eurodiet recommend an upper limit for added sugars less than 10%E [line 558]. Eurodiet equates this target with a corresponding food-based guideline consumption level of less than 4 occasions per day [line 558]. In view of the fact that action on diets is required now, and there is no evidence for a harmful effect of lower added sugar intakes on health, we strongly recommend that EFSA adopt a precautionary approach and set a DRV of less than 10%E from added sugars until sufficient evidence emerges to support the contrary. Annexes 2 & 3: There has been a notable omission of data on intakes of added sugars (non-milk extrinsic sugars) among children

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		and adults in Europe. We strongly recommend this is included.
National Heart Forum	5.2. Sugars	Lines 1516-7 Sugar: "Available data do not allow the setting of an UL for total or added sugars, neither an AI nor a recommended intake range." We do not agree (see arguments below) Line 541: Section 4: "Overview of dietary reference values & recommendations." Added Sugars should have their own section as opposed to being included with total carbohydrates in the way that they received separate attention in line 558 and Section 5: Line 853. Line 680-681: include dental caries as an endpoint [see lines 1020-21; lines1029-1031 and lines 1069-1071]. Lines 1484-1489: We agree that an upper limit for added sugars (non-milk extrinsic sugars) cannot be set, not because of insufficient data, but because there is no physiological need for added sugars. The draft opinion paper has identified substantial evidence for a detrimental effect of excessive sugar intakes on a variety of significant end-points including: bodyweight [lines 963-965, lines 980-83, lines 985-988]; type 2 diabetes [lines 1002 – 1005] and dental caries [eg lines 1020-21; 1029-1031]. It has also identified evidence that sugar-sweetened beverages do not induce satiety to the same extent as solid forms of carbohydrate, and that sugar-sweetened beverages contribute to weight gain [lines 993-996]. Furthermore, frequent consumption patterns of foods with added sugars are associated with a low nutrient density of diets [lines 880 to 882]; this has significant implications for the development of food-based dietary guidelines. The conditions which are associated with high intakes of added sugars (and foods containing them) are of major public health concern in Europe. Given the importance of DRVs for a variety of purposes (including assessment and planning of diets, developing FBDG, food labeling, nutrient profiles and evaluating progress), EFSA should come up with the best DRV estimates based on the available evidence. A number of existing guidelines including the WHO, Nordic countries, UK and Eurodiet recommend an upper limit for added sugars less than 10%E [line 558]. Eurodiet equates this target with a corresponding food-based guideline consumption level of less than 4 occasions per day [line 558]. In view of the fact that action on diets is required now, and there is no evidence for a harmful effect of lower added sugar intakes on health, we strongly recommend that EFSA adopt a precautionary approach and set a DRV of less than 10%E from added sugars until sufficient evidence emerges to support the contrary. Annexes 2 & 3: There has been a notable omission of data on intakes of added sugars (non-milk extrinsic sugars) among children and adults in Europe. We strongly recommend this is included.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
National Heart Forum	5.3. Dietary fibre	Dietary fibre: we recommend that complex carbohydrates and dietary fibre should be linked, so that the recommendation clearly states that complex carbohydrates should be consumed in the form of whole grain rather than refined forms, and dietary fibre derived from naturally occurring sources rather than isolated from its source.
National Heart Forum	6. Data on which to base dietary reference values	Lines 1516-7 Sugar: "Available data do not allow the setting of an UL for total or added sugars, neither an AI nor a recommended intake range." We do not agree (see arguments below) Line 541: Section 4: "Overview of dietary reference values & recommendations." Added Sugars should have their own section as opposed to being included with total carbohydrates in the way that they received separate attention in line 558 and Section 5: Line 853. Line 680-681: include dental caries as an endpoint [see lines 1020-21; lines1029-1031 and lines 1069-1071]. Lines 1484-1489: We agree that an upper limit for added sugars (non-milk extrinsic sugars) cannot be set, not because of insufficient data, but because there is no physiological need for added sugars. The draft opinion paper has identified substantial evidence for a detrimental effect of excessive sugar intakes on a variety of significant end-points including: bodyweight [lines 963-965, lines 980-83, lines 985-988]; type 2 diabetes [lines 1002 – 1005] and dental caries [eg lines 1020-21; 1029-1031]. It has also identified evidence that sugar-sweetened beverages do not induce satiety to the same extent as solid forms of carbohydrate, and that sugar-sweetened beverages contribute to weight gain [lines 993-996]. Furthermore, frequent consumption patterns of foods with added sugars are associated with a low nutrient density of diets [lines 880 to 882]; this has significant implications for the development of food-based dietary guidelines. The conditions which are associated with high intakes of added sugars (and foods containing them) are of major public health concern in Europe. Given the importance of DRVs for a variety of purposes (including assessment and planning of diets, developing FBDG, food labeling, nutrient profiles and evaluating progress), EFSA should come up with the best DRV estimates based on the available evidence. A number of existing guidelines including the WHO, Nordic countries, UK and Eurodiet recommend an upper limit for added sugars less than 10%E [line 558]. Eurodiet equates this target with a corresponding food-based guideline consumption level of less than 4 occasions per day [line 558]. In view of the fact that action on diets is required now, and there is no evidence for a harmful effect of lower added sugar intakes on health, we strongly recommend that EFSA adopt a precautionary approach and set a DRV of less than 10%E from added sugars until sufficient evidence emerges to support the contrary. Annexes 2 & 3: There has been a notable omission of data on intakes of added sugars (non-milk extrinsic sugars) among children and adults in Europe. We strongly recommend this is included.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
National Heart Forum	6.2. Sugars	Lines 1516-7 Sugar: "Available data do not allow the setting of an UL for total or added sugars, neither an AI nor a recommended intake range." We do not agree (see arguments below) Line 541: Section 4: "Overview of dietary reference values & recommendations." Added Sugars should have their own section as opposed to being included with total carbohydrates in the way that they received separate attention in line 558 and Section 5: Line 853. Line 680-681: include dental caries as an endpoint [see lines 1020-21; lines1029-1031 and lines 1069-1071]. Lines 1484-1489: We agree that an upper limit for added sugars (non-milk extrinsic sugars) cannot be set, not because of insufficient data, but because there is no physiological need for added sugars. The draft opinion paper has identified substantial evidence for a detrimental effect of excessive sugar intakes on a variety of significant end-points including: bodyweight [lines 963-965, lines 980-83, lines 985-988]; type 2 diabetes [lines 1002 – 1005] and dental caries [eg lines 1020-21; 1029-1031]. It has also identified evidence that sugar-sweetened beverages do not induce satiety to the same extent as solid forms of carbohydrate, and that sugar-sweetened beverages contribute to weight gain [lines 993-996]. Furthermore, frequent consumption patterns of foods with added sugars are associated with a low nutrient density of diets [lines 880 to 882]; this has significant implications for the development of food-based dietary guidelines. The conditions which are associated with high intakes of added sugars (and foods containing them) are of major public health concern in Europe. Given the importance of DRVs for a variety of purposes (including assessment and planning of diets, developing FBDG, food labeling, nutrient profiles and evaluating progress), EFSA should come up with the best DRV estimates based on the available evidence. A number of existing guidelines including the WHO, Nordic countries, UK and Eurodiet recommend an upper limit for added sugars less than 10%E [line 558]. Eurodiet equates this target with a corresponding food-based guideline consumption level of less than 4 occasions per day [line 558]. In view of the fact that action on diets is required now, and there is no evidence for a harmful effect of lower added sugar intakes on health, we strongly recommend that EFSA adopt a precautionary approach and set a DRV of less than 10%E from added sugars until sufficient evidence emerges to support the contrary. Annexes 2 & 3: There has been a notable omission of data on intakes of added sugars (non-milk extrinsic sugars) among children and adults in Europe. We strongly recommend this is included.
National Heart Forum	Conclusions and recommendations	Dietary fibre: we recommend that complex carbohydrates and dietary fibre should be linked, so that the recommendation clearly states that complex carbohydrates should be consumed in the form of whole grain rather than refined forms, and dietary fibre derived from naturally occurring sources rather than isolated from its source.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
National Heart Forum	Conclusions and recommendations	Lines 1516-7 Sugar: "Available data do not allow the setting of an UL for total or added sugars, neither an AI nor a recommended intake range." We do not agree (see arguments below) Line 541: Section 4: "Overview of dietary reference values & recommendations." Added Sugars should have their own section as opposed to being included with total carbohydrates in the way that they received separate attention in line 558 and Section 5: Line 853. Line 680-681: include dental caries as an endpoint [see lines 1020-21; lines1029-1031 and lines 1069-1071]. Lines 1484-1489: We agree that an upper limit for added sugars (non-milk extrinsic sugars) cannot be set, not because of insufficient data, but because there is no physiological need for added sugars. The draft opinion paper has identified substantial evidence for a detrimental effect of excessive sugar intakes on a variety of significant end-points including: bodyweight [lines 963-965, lines 980-83, lines 985-988]; type 2 diabetes [lines 1002 – 1005] and dental caries [eg lines 1020-21; 1029-1031]. It has also identified evidence that sugar-sweetened beverages do not induce satiety to the same extent as solid forms of carbohydrate, and that sugar-sweetened beverages contribute to weight gain [lines 993-996]. Furthermore, frequent consumption patterns of foods with added sugars are associated with a low nutrient density of diets [lines 880 to 882]; this has significant implications for the development of food-based dietary guidelines. The conditions which are associated with high intakes of added sugars (and foods containing them) are of major public health concern in Europe. Given the importance of DRVs for a variety of purposes (including assessment and planning of diets, developing FBDG, food labeling, nutrient profiles and evaluating progress), EFSA should come up with the best DRV estimates based on the available evidence. A number of existing guidelines including the WHO, Nordic countries, UK and Eurodiet recommend an upper limit for added sugars less than 10%E [line 558]. Eurodiet equates this target with a corresponding food-based guideline consumption level of less than 4 occasions per day [line 558]. In view of the fact that action on diets is required now, and there is no evidence for a harmful effect of lower added sugar intakes on health, we strongly recommend that EFSA adopt a precautionary approach and set a DRV of less than 10%E from added sugars until sufficient evidence emerges to support the contrary. Annexes 2 & 3: There has been a notable omission of data on intakes of added sugars (non-milk extrinsic sugars) among children and adults in Europe. We strongly recommend this is included.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
None	5.1. Total glycemic carbohydrates	5.1.2. Type 2 diabetes mellitus The lack of intervention studies on risk of type 2 diabetes cannot be interpreted that low-fat high carbohydrate diets are safe. Such diets have not been shown to be safe in the long-term. In fact, in the UNited States the introduction of such dietary recommendations, have resulted in an overwhelming increase in obesity and diabetes. Low fat high carb diet results in atherogenic dyslipidemia, similar to what is senn in diabetes type 2.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
None	5.1. Total glycemic carbohydrates	Glucose tolerance and the metabolic syndrome The introduction of low-fat high.carbohydrate diets has lead to an increase in the total number of calories consumed in countries where this diet is recommended, as stated by Mensink et al. In such countries including the USA and many european countries an increase in obesity, metabolic syndrome and diabetes has been observed. Mensink RP, Zock PL, Kester ADM, Katan MB. Effects of dietary fatty acids and carbohydrates on the ratio of serum total to HDL-cholesterol and on serum lipids and apolipoproteins: a meta-analysis of 60 controlled trials. Am J Clin Nutr 2003;77:1146-55 The recommended dietary guidelines will if followed most likely lead to an increase in the number of diabetics and sufferers of other aspects of the metabolic syndrome, since excess carbohydrates results in hyperinsulinemia. 1: Westman EC, Yancy WS, Haub MD, Volek JS. Insulin resistance from a low carbohydrate, high fat diet perspective. Metab Syndr Relat Disord. 2005;3(1):14-8. PubMed PMID: 18370705. 2: Westman EC, Volek JS. Postprandial triglycerides in response to high fat: role of dietary carbohydrate. Eur J Clin Invest. 2004 Jan;34(1):74; author reply 75. PubMed PMID: 14984441. 3: Westman EC, Mavropoulos J, Yancy WS, Volek JS. A review of low-carbohydrate ketogenic diets. Curr Atheroscler Rep. 2003 Nov;5(6):476-83. Review. PubMed PMID: 14525681. 4: Westman EC, Volek JS, Feinman RD. Carbohydrate restriction is effective in improving atherogenic dyslipidemia even in the absence of weight loss. Am J Clin Nutr. 2006 Dec;84(6):1549; author reply 1550. PubMed PMID: 17158442. 5: Westman EC, Feinman RD, Mavropoulos JC, Vernon MC, Volek JS, Wortman JA, Yancy WS, Phinney SD. Low-carbohydrate nutrition and metabolism. Am J Clin Nutr. 2007 Aug;86(2):276-84. Review. PubMed PMID: 17684196. 6: Yancy WS Jr, Volek JS, Westman EC. Nonfasting triglycerides and cardiovascular risk. JAMA. 2007 Nov 7;298(17):2004; author reply 2005-6. PubMed PMID: 17986691.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
None	5.1. Total glycemic carbohydrates	Insulin sensitivity and the metabolic syndrome The draft report has not gone into depth on the biochemical and physiological background of the metabolic syndrome wehich can be defined by the response to dietary carbohydrates. The following literature should be included in the analysis: 1: Westman EC, Yancy WS, Haub MD, Volek JS. Insulin resistance from a low carbohydrate, high fat diet perspective. Metab Syndr Relat Disord. 2005;3(1):14-8. PubMed PMID: 18370705. 2: Westman EC, Volek JS. Postprandial triglycerides in response to high fat: role of dietary carbohydrate. Eur J Clin Invest. 2004 Jan;34(1):74; author reply 75. PubMed PMID: 14984441. 3: Westman EC, Mavropoulos J, Yancy WS, Volek JS. A review of low-carbohydrate ketogenic diets. Curr Atheroscler Rep. 2003 Nov;5(6):476-83. Review. PubMed PMID:14525681. 4: Westman EC, Volek JS, Feinman RD. Carbohydrate restriction is effective in improving atherogenic dyslipidemia even in the absence of weight loss. Am J Clin Nutr. 2006 Dec;84(6):1549; author reply 1550. PubMed PMID: 17158442. 5: Westman EC, Feinman RD, Mavropoulos JC, Vernon MC, Volek JS, Wortman JA, Yancy WS, Phinney SD. Low-carbohydrate nutrition and metabolism. Am J Clin Nutr. 2007 Aug;86(2):276-84. Review. PubMed PMID: 17684196. 6: Yancy WS Jr, Volek JS, Westman EC. Nonfasting triglycerides and cardiovascular risk. JAMA. 2007 Nov 7;298(17):2004; author reply 2005-6. PubMed PMID: 17986691.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
None	5.1. Total glycemic carbohydrates	It is argued that a sufficient amount of carbohydrates are required to avoid ketosis. However, ketosis is a physiological phenomenon an does not have to be avoided to stay in good health. During ketosis, more free fatty acids ore NEFA is utilized in the skeletal muscle due to lower insulin levels. Since one of the main healt problems in the EU is Obesity and diabetes, ketosis should not be avoided. The ketogenic low-carbohydrate diet is well documented for not only reducing weight and introducing normoglycemia, but also for reducing the atherogenic dyslipidemia that occurs with low-fat high carbohydrate diets. Ralf Sundberg MD PhD Associate Professor
None	6.1. Total glycemic carbohydrates	Row 1462 continued 38: Parillo M, Giacco R, Ciardullo AV, Rivellese AA, Riccardi G. Does a high-carbohydrate diet have different effects in NIDDM patients treated with diet alone or hypoglycemic drugs? Diabetes Care. 1996 May;19(5):498-500. PubMed PMID: 8732716. 39: Parillo M, Giacco R, Ciardullo AV, Rivellese AA, Riccardi G. Does a high-carbohydrate diet have different effects in NIDDM patients treated with diet alone or hypoglycemic drugs? Diabetes Care. 1996 May;19(5):498-500. PubMed PMID: 8732716. 40: Parillo M, Rivellese AA, Ciardullo AV, Capaldo B, Giacco A, Genovese S, Riccardi G. A high-monounsaturated-fat/low-carbohydrate diet improves peripheral insulin sensitivity in non-insulin-dependent diabetic patients. Metabolism. 1992 Dec;41(12):1373-8. PubMed PMID: 1461145. 41: Parillo M, Giacco R, Ciardullo AV, Rivellese AA, Riccardi G. Does a high-carbohydrate diet have different effects in NIDDM patients treated with diet alone or hypoglycemic drugs? Diabetes Care. 1996 May;19(5):498-500. PubMed PMID: 8732716. 42: Low CC, Grossman EB, Gumbiner B. Potentiation of effects of weight loss by monounsaturated fatty acids in obese NIDDM patients. Diabetes. 1996 May;45(5):569-75. PubMed PMID: 8621005. 43: Gutierrez M, Akhavan M, Jovanovic L, Peterson CM. Utility of a short-term 25% carbohydrate diet on improving glycemic control in type 2 diabetes mellitus. J Am Coll Nutr. 1998 Dec;17(6):595-600. PubMed PMID: 9853539. 44: Daly ME, Paisey R, Paisey R, Millward BA, Eccles C, Williams K, Hammersley S, MacLeod KM, Gale TJ. Short-term

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		effects of severe dietary carbohydrate-restriction advice in Type 2 diabetes--a randomized controlled trial. Diabet Med. 2006 Jan;23(1):15-20. PubMed PMID: 16409560. 45: Sundberg R, Arfors KE, Hedbrant J, Nielsen JV. [Carbohydrate-restricted diet in diabetes and obesity is a physiological and evidence-based method]. Lakartidningen. 2008 Nov 19-25;105(47):3460-1. Swedish. PubMed PMID: 19112980. 46. Nielsen JV, Joensson EA. Low-carbohydrate diet in type 2 diabetes: stable improvement of bodyweight and glycemic control during 44 months follow-up. Nutr Metab (Lond). 2008 May 22;5:14. PubMed PMID: 18495047; PubMed Central PMCID: PMC2424054. 47: Accurso A, Bernstein RK, Dahlqvist A, Draznin B, Feinman RD, Fine EJ, Gleed A, Jacobs DB, Larson G, Lustig RH, Manninen AH, McFarlane SI, Morrison K, Nielsen JV, Ravnskov U, Roth KS, Silvestre R, Sowers JR, Sundberg R, Volek JS, Westman EC, Wood RJ, Wortman J, Vernon MC. Dietary carbohydrate restriction in type 2 diabetes mellitus and metabolic syndrome: time for a critical appraisal. Nutr Metab (Lond). 2008 Apr 8;5:9. PubMed PMID: 18397522; PubMed Central PMCID:PMC2359752. 48: Nielsen JV, Joensson E. Low-carbohydrate diet in type 2 diabetes. Stable improvement of bodyweight and glycemic control during 22 months follow-up. Nutr Metab (Lond). 2006 Jun 14;3:22. PubMed PMID: 16774674; PubMed Central PMCID:PMC1526736. 49: Nielsen JV, Jönsson E, Ivarsson A. A low carbohydrate diet in type 1 diabetes: clinical experience--a brief report. Ups J Med Sci. 2005;110(3):267-73. PubMed PMID: 16454166. 50: Nielsen JV, Jönsson E, Nilsson AK. Lasting improvement of hyperglycaemia and bodyweight: low-carbohydrate diet in type 2 diabetes. A brief report. Ups J Med Sci. 2005;110(2):179-83. PubMed PMID: 16075898.
None	6.1. Total glycemic carbohydrates	Row 1463 contains an erroneous statement by the panel Intervention studies do absolutely not provide evidence that high-fat low-carbohydrate diets are associated with adverse effects on body weight. Quite contrary such diets are at least as effective as low-fat diets in that respect, but recent studies have also shown that carbohydrate restriction improves atherogenic dyslipidemia in contrast to high carbohydrate diets and are superior in many other health related aspects. 1. Hession M, Rolland C,Kulkarniu, Wise A, Broom J. Systematic review of randomized controlled trials of low-carbohydrate vs. low-fat/lowcalorie diets in the management of obesity and its comorbidities. Obes Rev. 2008 Aug 11 [Epub ahead of print].

ORGANISATION	CHAPTER TEXT	COMMENT TEXT

2. Gardner CD, Kiazand A, Alhassan S, Kim S, Stafford RS, Balise RR, Kraemer HC, King AC. Comparison of the Atkins, Zone, Ornish, and LEARN diets for change in weight and related risk factors among overweight premenopausal women: the A TO Z Weight Loss Study: a randomized trial. JAMA. 2007 Mar 7;297(9):969-77. Erratum in: JAMA. 2007 Jul 11;298(2):178. PubMed PMID: 17341711.

3. Shai I, SchwarzfuchsD,Henkin Y, Shahar DR, WitkowS, Greenberg I, et al;Dietary Intervention Randomized Controlled Trial (DIRECT) Group.Weight loss with a low-carbohydrate, Mediterranean, or lowfat diet.NEngl JMed. 2008;359:229-41.

4. Boden G, Sargrad K,Homko C, Mozzoli M, Stein TP. Effect of a lowcarbohydrate diet on appetite, blood glucose levels, and insulin resistance in obese patientswith type2 diabetes. Ann InternMed. 2005;142:403-11.

5. Brehm BJ, Seeley RJ, Daniels SR, D"Alessio DA. A randomized trial comparing a very low carbohydrate diet and a calorie-restricted low fat diet on body weight and cardiovascular risk factors in healthy women. J Clin Endocrinol Metab 2003;88:1617-23.

6..Foster GD, Wyatt HR, Hill JO, McGuckin BG, Brill C, Mohammed BS, Szapary PO och andra. A randomized trial of a low-carbohydrate diet for obesity. N Engl J Med. 2003;348:2082-90.

7. Sondike SB, Copperman N, Jacobson MS. Effects of a low-carbohydrate diet on weight loss and cardiovascular risk factor in overweight adolescents. J Pediatr 2003;142:253-8.

8. Siegel RM, Rich W, Joseph EC, Linhardt J, Knight J, Khoury J, Daniels SR. A 6-month, office-based, low-carbohydrate diet intervention in obese teens. Clin Pediatr (Phila). 2009 Sep;48(7):745-9. Epub 2009 Mar 4. PubMed PMID: 19264718.

9. Siegel RM, Rich W, Joseph EC, Linhardt J, Knight J, Khoury J, Daniels SR. A 6-month, office-based, low-carbohydrate diet intervention in obese teens. Clin Pediatr (Phila). 2009 Sep;48(7):745-9. Epub 2009 Mar 4. PubMed PMID: 19264718.

10. Samaha FF, Iqbal N, Seshadri P, Chicano KL, Daily DA, McGrory J, Williams T, Williams M, Gracely EJ, Stern L. A low-carbohydrate as compared with a low-fat diet in severe obesity. NEngl J Med 2003;348:2074-81.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
None	6.1. Total glycemic carbohydrates	Row 1463 continued reference list 11. Meckling KA, O"Sullivan C, Saari D. Comparison of a low-fat diet to a low-carbohydrate diet on weight loss, body composition,and risk factors for diabetes and cardiovascular disease in free-living, overweight men and women. J Clin Endocrinol Metab 2004;89:2717-23. 12 Stern L, Iqbal N, Seshadri P, Chicano KL, Daily DA, McGrory J, Williams M, Gracely EJ, Samaha FF. The effects of low-carbohydrate versus conventional weight loss diets in severely obese adults: one-year follow-up of a randomized trial. Ann Intern Med 2004;140:778-85. 13. Segal-Isaacson CJ, Johnson S, Tomuta V, Cowell B, Stein DT. A randomized trial comparing low-fat and low-carbohydrate diets matched for energy and protein. Obes Res 2004;12 Suppl 2:130S-40S. 14. Yancy WS, Olsen MK, Guyton JR, Bakst RP, Westman EC. A low- carbohydrate, ketogenic diet versus a low-fat diet to treat obesityand hyperlipidemia: a randomized, controlled trial. Ann Intern Med 2004; 140(10): 769-77. 15. Nickols-Richardson SM, Coleman MD, Volpe JJ, Hosig KW.Perceived hunger is lower and weight loss is greater in overweight premenopausal women consuming a low-carbohydrate/high-protein vs high-carbohydrate/low-fat diet. J Am Diet Assoc 2005;105:1433-7. 16: Al-Zaid NS, Dashti HM, Mathew TC, Juggi JS. Low carbohydrate ketogenic diet enhances cardiac tolerance to global ischaemia. Acta Cardiol. 2007 Aug;62(4):381-9. PubMed PMID: 17824299. 17: Al-Khalifa A, Mathew TC, Al-Zaid NS, Mathew E, Dashti HM. Therapeutic role of low-carbohydrate ketogenic diet in diabetes. Nutrition. 2009 November - December;25(11-12):1177-1185. PubMed PMID: 19818281. 18. Al-Khalifa A, Mathew TC, Al-Zaid NS, Mathew E, Dashti HM. Therapeutic role of low-carbohydrate ketogenic diet in diabetes. Nutrition. 2009 November - December;25(11-12):1177-1185. PubMed PMID: 19818281. 19: Garg A, Bantle JP, Henry RR, Coulston AM, Griver KA, Raatz SK, Brinkley L, Chen YD, Grundy SM, Huet BA, et al. Effects of varying carbohydrate content of diet in patients with non-insulin-dependent diabetes mellitus. JAMA. 1994 May 11;271(18):1421-8. PubMed PMID: 7848401. 20: Chen YD, Coulston AM, Zhou MY, Hollenbeck CB, Reaven GM. Why do low-fat high-carbohydrate diets accentuate postprandial lipemia in patients with NIDDM? Diabetes Care. 1995 Jan;18(1):10-6. PubMed PMID: 7698030.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		21: Chen YD, Swami S, Skowronski R, Coulston AM, Reaven GM. Effect of variations in dietary fat and carbohydrate intake on postprandial lipemia in patients with noninsulin dependent diabetes mellitus. J Clin Endocrinol Metab. 1993 Feb;76(2):347-51. PubMed PMID: 8432777. 22: Hollenbeck CB, Coulston AM. Effects of dietary carbohydrate and fat intake on glucose and lipoprotein metabolism in individuals with diabetes mellitus. Diabetes Care. 1991 Sep;14(9):774-85. Review. PubMed PMID: 1959471. 23: Coulston AM, Hollenbeck CB, Swislocki AL, Chen YD, Reaven GM. Deleterious metabolic effects of high-carbohydrate, sucrose-containing diets in patients with non-insulin-dependent diabetes mellitus. Am J Med. 1987 Feb;82(2):213-20. PubMed PMID: 3544839. 24: Coulston AM, Hollenbeck CB, Swislocki AL, Reaven GM. Persistence of hypertriglyceridemic effect of low-fat high-carbohydrate diets in NIDDM patients. Diabetes Care. 1989 Feb;12(2):94-101. PubMed PMID: 2539286. 25: Parillo M, Coulston A, Hollenbeck C, Reaven G. Effect of a low fat diet on carbohydrate metabolism in patients with hypertension. Hypertension. 1988 Mar;11(3):244-8. PubMed PMID: 3280483.
None	6.1. Total glycemic carbohydrates	Row 1463 continued 26: Nuttall FQ, Gannon MC, Saeed A, Jordan K, Hoover H. The metabolic response of subjects with type 2 diabetes to a high-protein, weight-maintenance diet. J Clin Endocrinol Metab. 2003 Aug;88(8):3577-83. PubMed PMID: 12915639. 27: Gannon MC, Nuttall FQ. Effect of a high-protein, low-carbohydrate diet on blood glucose control in people with type 2 diabetes. Diabetes. 2004 Sep;53(9):2375-82. PubMed PMID: 15331548. 28: Fuh MM, Lee MM, Jeng CY, Ma F, Chen YD, Reaven GM. Effect of low fat-high carbohydrate diets in hypertensive patients with non-insulin-dependent diabetes mellitus. Am J Hypertens. 1990 Jul;3(7):527-32. PubMed PMID: 2194509. 29: Boling CL, Westman EC, Yancy WS. Comparison of weight-loss diets. N Engl J Med. 2009 May 21;360(21):2247; author reply 2247-8. PubMed PMID: 19458373. 30: Austin GL, Dalton CB, Hu Y, Morris CB, Hankins J, Weinland SR, Westman EC, Yancy WS Jr, Drossman DA. A very low-carbohydrate diet improves symptoms and quality of life in diarrhea-predominant irritable bowel syndrome. Clin Gastroenterol Hepatol. 2009 Jun;7(6):706-708.e1. Epub 2009 Mar 10. PubMed PMID:19281859; PubMed Central PMCID: PMC2693479. 31: Yancy WS Jr, Almirall D, Maciejewski ML, Kolotkin RL, McDuffie JR, Westman EC. Effects of two weight-loss diets on health-related quality of life. Qual Life Res. 2009 Apr;18(3):281-9. Epub 2009 Feb 11. PubMed PMID: 19212822.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		32: Westman EC, Yancy WS Jr, Mavropoulos JC, Marquart M, McDuffie JR. The effect of a low-carbohydrate, ketogenic diet versus a low-glycemic index diet on glycemic control in type 2 diabetes mellitus. Nutr Metab (Lond). 2008 Dec 19;5:36. PubMed PMID: 19099589; PubMed Central PMCID: PMC2633336. 33: Westman EC, Yancy WS, Haub MD, Volek JS. Insulin resistance from a low carbohydrate, high fat diet perspective. Metab Syndr Relat Disord. 2005;3(1):14-8. PubMed PMID: 18370705. 34: Yancy WS, Vernon MC, Westman EC. A pilot trial of a low-carbohydrate, ketogenic diet in patients with type 2 diabetes. Metab Syndr Relat Disord. 2003 Sep;1(3):239-43. PubMed PMID: 18370668. 35: Westman EC, Feinman RD, Mavropoulos JC, Vernon MC, Volek JS, Wortman JA, Yancy WS, Phinney SD. Low-carbohydrate nutrition and metabolism. Am J Clin Nutr. 2007 Aug;86(2):276-84. Review. PubMed PMID: 17684196. 36: Rasmussen OW, Thomsen C, Hansen KW, Vesterlund M, Winther E, Hermansen K. Effects on blood pressure, glucose, and lipid levels of a high-monounsaturated fat diet compared with a high-carbohydrate diet in NIDDM subjects. Diabetes Care. 1993 Dec;16(12):1565-71. PubMed PMID: 8117360. 37: Campbell LV, Marmot PE, Dyer JA, Borkman M, Storlien LH. The high-monounsaturated fat diet as a practical alternative for NIDDM. Diabetes Care. 1994 Mar;17(3):177-82. PubMed PMID: 8174444.
Nutricia/Danone	5.3. Dietary fibre	Dear EFSA, It is good to see this much needed manuscript. I work in the area of clinical paediatric nutrition for Nutricia. My comment relates to your recommendation for children 1-2years - 2g/MJ - when based on calories alone it limits the amount of fibre that will be given to those on low calorie diets such as overweight/obese or immobile children including many neurologically impaired children. These children often have a lower kcal need but have the same if not a higher fibre needs due to constipation. Would it be possible to add a footnote or paragraph to this section for groups such as the neurological children who are fed artificially to ensure that they receive adequate amounts of fibre if on low energy/kcal diets? especially those prone to constipation? for example - the recent Chao et al 2008 data suggests that those <8years need a minimum of 10g/day and those >8years need at least 14.5g/day to see improvements in constipation. In immobile groups perhaps this is even higher? Recent data [Guimber et al 2009] suggests that many of these children consume very small volumes of feed ~800kcal/day even in older children [~11years], so if linked to kcal it will limit their fibre intake drastically [6.6g/day for these children]. Thanks for considering my comment. Josephine Garvey, Medical Affairs Manager Paediatrics

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
NVB (Association of the Dutch Bakery Industry)	2. Definition/category	We have a question about the definition of fibre in the Summary: line 28-32. We would also like to react on the Summary, but because this isn"t possible we react in general. Please use this comment also for the Summary. Why isn"t the new definition of fibre, as agreed in Commission Directive 2008/100/EC, used in the Summary? This definition is: For the purposes of this Directive "fibre" means carbohydrate polymers with three or more monomeric units, which are neither digested nor absorbed in the human small intestine and belong to the following categories: — edible carbohydrate polymers naturally occurring in the food as consumed; — edible carbohydrate polymers which have been obtained from food raw material by physical, enzymatic or chemical means and which have a beneficial physiological effect demonstrated by generally accepted scientific evidence; — edible synthetic carbohydrate polymers which have a beneficial physiological effect demonstrated by generally accepted scientific evidence.'
Productboard for Horticulture	Conclusions and recommendations	In our opinion the recommendation of at least 25 g/day is lower than desireable for optimal positive health effects. Based on scientific findings, that are mentioned in the report, and also based on the average of the different national recommendations, we think a at least 30 g/day is a more appropriate recommendation. This intake level helps to reduce overweight and related diseases more than does an intake of 25 g/day. In addittion we think it would make sense to give the same recommendation for dietary fibre for children from the age of 15, as for adults. This age group of 15-17 consumes on average the same or even more energy then adults, and therefore easily reaches an intake of at least 30 g/day. We don"t see the logic behind setting the recommendation for this group as low as 21 g/day, and we wonder on what scientific base this number is set. Thank you for taking into account our remarks.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Safeood	4. Overview of dietary refernce values and recommendations	Safefood is a North-South Body promoting food safety and healthy eating on the island of Ireland. Our remit is for both research and communication. Safefood has a particular concern about not setting an UL for sugars. People eat foods not nutrients, and organisations such as Safefood are charged with the translation of nutrient recommendations into food-based dietary guidelines and developing health messages that the pubic can understand. There is evidence that sugary drinks and sugary foods that are high in energy density may promote obesity, and that frequent sugar consumption may contribute to tooth decay. Therefore in the interest of promoting and protecting public health safefood would advocate a more cautious approach and set the upper limit at 10% of energy intake. This is supported by evidence from the North South Food Consumption Survey where in adults for example, those meeting the WHO guideline of consuming sugary foods four times or less per day had a sugar intake of 9% (Br J Nutr. 2008 May;99(5):1117-26). The National Children"s Food Survey conducted in the Republic of Ireland also showed some evidence of micronutrient dilution among children with high consumption of sugars (J Hum Nutr Diet. 2008 Oct;21(5):438-50).
Scientific Advisory Committee on Nutrition	1. Introduction	The opinion does not contain any details on the methodology used to collect the evidence and would strongly recommend that a section containing the rationale for the inclusion of studies is added. A systematic approach is required to inform the DRV's in order to ensure that the recommendations are based on the best available evidence and this should be done in a transparent manner. The Scientific Advisory Committee on nutrition (SACN) Working Group on Carbohydrates are currently engaged in conducting a systematic review on carbohydrates and health which covers the outcomes of cardiometabolic health, colorectal health and dental health. This work has been commissioned independently of the Working Group and will be used to inform deliberations on future recommendations. As this work is relevant to the development EFSA's DRVs, SACN would be willing to provide EFSA with the outcomes once the work has been completed at the end of 2011.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Scientific Advisory Committee on Nutrition	2. Definition/category	Section 2.1.1 Categories- glycaemic carbohydrates It is felt that by defining all carbohydrates which can be used in cellular metabolism as 'glycaemic' carbohydrates is a little simplistic e.g. fructose does not have a substantial effect on glycaemia. Section 2.1.2 Categories- dietary fibre Lines 298-303 emphasises defining fibre in terms of physiological effects of fibre on the person. However, there appears to be no justification for the statement made in lines 324-331 which include oligosaccharides and lignin as fibre on these grounds. It is essential that the materials listed are shown to have a physiological effect on the person before defining them as fibre. The current SACN definition uses this basis on which to classify components as fibre and from the evidence available would not consider oligosaccharides as fibre at this time (refer to http://www.sacn.gov.uk/). The report acknowledges that the evidence in relation to the benefit of dietary fibre is largely based on mixed diets where the fibre is primarily derived from plants. The evidence in relation to a beneficial effect of artificial 'fibre' is poor. Given the important health messages around fibre it is essential that consumers are able to select which products to consume for their health on the basis of the best available evidence. If manufacturers are allowed to label foods as containing fibre on the basis of its content of artificial 'fibre' then this is potentially misleading. The definition used in this report will allow them to do this. This problem is not dealt with by health claims legislation, as the ability to label a product as containing fibre is in effect a de facto 'health claim'. The reason given for not following the FNB route of distinguishing between different types of fibre – the difficulty of identifying these analytically – seems rather weak since the level of addition of synthetic compounds is determined by food manufacturers and should be easy to ascertain. In addition to the problem of these synthetic fibres (with no important health benefit) potentially displacing plant derived fibre (which is likely to have a health benefit), there is the possibility that they may also actually be detrimental to health in some circumstances. Taken in sufficient quantities these compounds can result in bloating, flatus, loss of appetite, diarrhoea and malabsorption of essential nutrients. The adoption of this all encompassing definition of fibre opens the EU to the possibility of very widespread use of synthetic 'fibres' which could potentially adversely affect human health. Section 2.2.1 – Metabolism and glycaemic carbohydrates The description of the physiological effect of insulin (lines 384-5) is too simplistic (hepatic and cerebral glucose uptake are insulin independent), and the statement that fructose is converted to glucose in the liver (lines 390-1) needs a qualifying because this is quantitatively minor.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Scientific Advisory Committee on Nutrition	5.1. Total glycemic carbohydrates	Section 5.1.2 –Total glycaemic carbohydrates and glucose tolerance and insulin sensitivity Himsworth produced the definitive work on dietary carbohydrate effects on glucose tolerance in the 1930's and should be acknowledged here. Section 5.1.5 – Total glycaemic carbohydrates and type 2 diabetes mellitus. The conclusion (lines 831-2) is not justified by the preceding text. Lines 822-5 say that the 'presumed increase in carbohydrate intake (targeted at 55%) was compatible with a lower risk for type 2 diabetes..' whereas the conclusion says '..diets providing about 55% as carbohydrates are compatible with a lower risk..' This conclusion is far too definite and says nothing about the other studies which showed no such link Section 5.1.6 –Total glycaemic carbohydrates and cardiovascular disease the description of the WHI needs to make it clear how small an increase in fruit and vegetable intake was achieved in this study, and that the results are, thus, of little value in assessing possible effects on risk factors.
Scientific Advisory Committee on Nutrition	5.2. Sugars	Section 5.2.1 – Sugars and nutrient density of diet A systematic review approach to the cited literature is really required for this. How many of the studies cited in the first part of this paragraph are included in the 15 described in the review by Rennie and Livingstone? This analysis needs to be very rigorous before the conclusion can be justified. Section 5.2.2 and Annex 4 – Sugars and glucose tolerance and insulin sensitivity The conclusion on lines 895-7 is not a fair summary of the preceding text. A thorough analysis of the studies is needed to form an overall view. For example, it is unlikely for a change in HbA1C to be detected during a 4 week study. There also needs to be an explanation of why fructose might differ from sucrose, as the two fructose studies in annex 4 have no effect but the sucrose apparently does. Thus, a thorough analysis considering amounts of fructose in the different studies and a critical evaluation of the data are needed. Section 5.2.3 – Sugars and serum lipids The final sentence of the conclusion is not consistent with the data presented. A thorough, systematic evaluation of the literature is needed to identify the effect, or lack of it. From the narrative description of the studies there does appear to be an effect of sucrose/fructose and a cautious analysis of these data should be used to identify a UL. Even if this only provides benefit to a sub-group of the population, there is no justification for not providing such a value. The RNI values for protein and micronutrient

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		intake are set at a level that will meet the requirements of 97.5% of the normal population, which have general agreement. Therefore, why not set a UL for sucrose (and other dietary components) that minimise the likelihood of elevating cardiometabolic disease risk factors in the majority of the population? It is also perhaps not appropriate to regard sugars as being equivalent, irrespective of the type of sugars being considered, because fructose has different metabolic effects on the liver to that of glucose or galactose. Section 5.2.5 – Sugars and body weight Lines 985-991 compare one meta-analysis with 88 studies with another one containing 10 studies and says the latter did not show a clear quantitative relationship. This is not surprising given the effect size of the larger analysis was small, but significant. More worrying is the analysis of the first meta-analysis (with 88 studies) which describes '..Most studies were cross-sectional (17) and longitudinal (10)..'. This only amounts to 27 studies and, therefore, does not represent 88 studies as stated. Section 5.2.6 – Type 2 diabetes Lines 1002-4 state that 'However, consumption of sugar sweetened beverages….appears to increase type 2 diabetes risk, possibly through passive calorie [should be energy] consumption and weight gain.' This is in sharp contrast to lines 992-3 which say the evidence on effects on weight gain is inconsistent. These two statements are contradictory, and clearly a full rigorous systematic review is needed before any firm conclusions can be drawn. Section 5.2.7 Sugars and dental caries The text indicates that vulnerable groups are at risk of dental caries from dietary sucrose and so a UL should be set to protect those individuals, even if it is true that others in the population could tolerate a higher intake. Consequently, it is felt that it is not appropriate to say a UL cannot be set – the converse of an RNI for protein which oversupplies the vast majority of the population needs to be produced so that the vulnerable are protected.
Scientific Advisory Committee on Nutrition	5.3. Dietary fibre	Section 5.3 – Dietary fibre The literature on this topic is much more extensive than that cited in the document and needs a systematic analysis. For many of the outcomes the effect of fibre is not observed with all fibre sources, but is limited to different sources for different outcomes. Thus, the sections need to be much more specific and underpinned by a rigorous systematic approach. Section 5.3.4 – Dietary fibre and blood pressure No comment is made of the impact of dietary potassium on blood pressure and the need to control for this when effects of fruits and vegetable as sources of fibre are being discussed.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		Section 5.3.6 – Dietary fibre and Type 2 diabetes This section requires an objective summary of all available studies, not just the few selected here. If this is done then the overall conclusion will be rather different. Section 5.3.9 Mineral absorption In lines 1271-1273 it discusses the effect of phytic acid on the absorption of iron and zinc. However evidence assessed as part of the recent draft SACN iron and health report actually weakens this line of thinking, since most of the data is derived from short term experimental studies which do not take account of homeostatic control in response to changes in the diet. Studies which investigate the whole diet suggest that data derived from single meal interventions may overestimate the impact of inhibitors on iron absorption. Further information on the report can be found at: http://www.sacn.gov.uk/reports_position_statements/index.html Section 5.3.10 – Dietary fibre and colorectal cancer Lines 1311 to 1317 are rather surprising because the World Cancer Research Fund expert panel (WCRF 2007) were unable to draw a firm conclusion on foods containing dietary fibre (which was defined as including both foods naturally containing 'fibre' and foods which have had 'fibre' added). This was despite an apparent dose-response relationship based on cohort studies and evidence for a plausible mechanism because residual confounding could not be excluded. Thus the conclusions on lines 1321 – 6 are far too positive about beneficial effects on colon cancer and do not reflect the evidence cited by the WCRF. In addition SACN assessed the evidence in relation to fibre components and colorectal cancer and concluded the following: "The findings suggest that increased overall fibre intake may reduce colorectal cancer risk; however further evidence is required to confirm this observation. On balance, due to the paucity of data and inconsistent findings, there is not enough evidence to conclude whether specific forms of fibre intake have an association with the risk of colorectal cancer or adenoma." More information on the SACN statement on dietary fibre can be found at: http://www.sacn.gov.uk/reports_position_statements/reports/narrative_synthesis_of_health_effects_of_potential_dietary_fibre_components_-_13th_october_2008.html

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Scientific Advisory Committee on Nutrition	Conclusions and recommendations	Conclusions and Recommendations The conclusions and recommendations will require rewriting once the issues raised above have been resolved. Nevertheless it is reassuring to see lines 1519-21 where it is stated that 'The role of dietary fibre in bowel function was considered the most suitable criterion for establishing an adequate intake….adequate for normal laxation in adults.' The logical extension of this statement is that in order to be considered as fibre, a food component would need to be able to be shown to have effects on bowel function, which is consistent with the UK position regarding the definition of fibre. It would also be reasonable to allow an effect on the health status of the person as an additional qualifying characteristic, but it is important that this is clearly an effect on the person not just the microbiota. Annex 1 The UK Scientific Advisory Committee on Nutrition (SACN) definition of dietary fibre is missing from this section summarising member states definitions.
Tate & Lyle PLC. Chair, Fibre Consortium	3. Dietary sources and intake data	The Fibre Consortium welcomes the work of EFSA on the setting of population reference intakes for dietary fibre which confirms the role of dietary fibre as a key nutritional component of a healthy balanced diet. However, we are of the opinion that the dietary reference value (DRV) proposed for dietary fibre of 25g/day is the absolute minimum value that is considered adequate for general nutrition. Published EU reference values for recommended intake of dietary fibre range from 25 - 38 g/day (based on sex and age) for the general population. EFSA are recommending that dietary fibre intakes of 25 g/day are considered to be adequate for adults as the amount needed to maintain normal bowel function. This is just one beneficial effect of fibre intake and EFSA acknowledge that higher intakes may have additional benefits. Hence, in order for consumers to be encouraged to increase their fibre intake, we would advise that a level above the minimum "adequate" value be considered at this time. It has to be recognised that as part of a varied diet, consumers have the opportunity to increase their fibre intake from a number of sources. Many of the national recommendations are based on fibre consumption data obtained from eating fruits, grains and vegetables and thus not always including added fibres obtained functional foods, e.g. desired intake levels for dietary fibres such as resistant starch are recommended to be in the region of 17 - 20g/day. If the consensus is that EFSA retain the DRV of 25g/day for fibre, then there should be a mechanism for this to be regularly reviewed particularly when additional consumption data and recommended intakes of further fibre components become available.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Tate & Lyle PLC. Chair, Fibre Consortium	5.3. Dietary fibre	The Fibre Consortium welcomes the work of EFSA on the setting of population reference intakes for dietary fibre which confirms the role of dietary fibre as a key nutritional component of a healthy balanced diet. However, we are of the opinion that the dietary reference value (DRV) proposed for dietary fibre of 25g/day is the absolute minimum value that is considered adequate for general nutrition. Published EU reference values for recommended intake of dietary fibre range from 25 - 38 g/day (based on sex and age) for the general population. EFSA are recommending that dietary fibre intakes of 25 g/day are considered to be adequate for adults as the amount needed to maintain normal bowel function. This is just one beneficial effect of fibre intake and EFSA acknowledge that higher intakes may have additional benefits. Hence, in order for consumers to be encouraged to increase their fibre intake, we would advise that a level above the minimum "adequate" value be considered at this time. It has to be recognised that as part of a varied diet, consumers have the opportunity to increase their fibre intake from a number of sources. Many of the national recommendations are based on fibre consumption data obtained from eating fruits, grains and vegetables and thus not always including added fibres obtained functional foods, e.g. desired intake levels for dietary fibres such as resistant starch are recommended to be in the region of 17 - 20g/day. If the consensus is that EFSA retain the DRV of 25g/day for fibre, then there should be a mechanism for this to be regularly reviewed particularly when additional consumption data and recommended intakes of further fibre components become available.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
Tate & Lyle PLC. Chair, Fibre Consortium	Conclusions and recommendations	The Fibre Consortium welcomes the work of EFSA on the setting of population reference intakes for dietary fibre which confirms the role of dietary fibre as a key nutritional component of a healthy balanced diet. However, we are of the opinion that the dietary reference value (DRV) proposed for dietary fibre of 25g/day is the absolute minimum value that is considered adequate for general nutrition. Published EU reference values for recommended intake of dietary fibre range from 25 - 38 g/day (based on sex and age) for the general population. EFSA are recommending that dietary fibre intakes of 25 g/day are considered to be adequate for adults as the amount needed to maintain normal bowel function. This is just one beneficial effect of fibre intake and EFSA acknowledge that higher intakes may have additional benefits. Hence, in order for consumers to be encouraged to increase their fibre intake, we would advise that a level above the minimum "adequate" value be considered at this time. It has to be recognised that as part of a varied diet, consumers have the opportunity to increase their fibre intake from a number of sources. Many of the national recommendations are based on fibre consumption data obtained from eating fruits, grains and vegetables and thus not always including added fibres obtained functional foods, e.g. desired intake levels for dietary fibres such as resistant starch are recommended to be in the region of 17 - 20g/day. If the consensus is that EFSA retain the DRV of 25g/day for fibre, then there should be a mechanism for this to be regularly reviewed particularly when additional consumption data and recommended intakes of further fibre components become available.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
UNESDA	5.2. Sugars	References linked to submitted UNESDA comments on 5.2.5 Body Weight Almiron-Roig, E., Y. Chen, and A. Drewnowski, Liquid calories and the failure of satiety: how good is the evidence? Obes Rev, 2003. 4(4): p. 201-12. Almiron-Roig E, Flores SY, Drewnowski A. No difference in satiety or in subsequent energy intakes between a beverage and a solid food. Physiology and Behavior. 2004; 82: 671-677. Anderson, G.H. (2006) Sugars-containing beverages and post-prandial satiety and food intake. Int J Obesity 30:S52-S59. Brown RC. Nutrition for optimal performance during exercise: carbohydrate and fat. Curr Sports Med Rep. 2002; 1:222-229. Cotton JR, Burley VJ, Weststrate JA, Blundell JE. Dietary fat and appetite: similarities and differences in the satiating effect of meals supplemented with either fat or carbohydrate. J Hum Nutr Diet. 2007; 20:186-199. DiMeglio DP, Mattes RD. Liquid versus solid carbohydrate: effects on food intake and body weight. International Journal Obesity Related Metabolic Disorders 2000; 24: 794-800 Hulshof T, De Graaf C, Westrate J. The effects of pre-loads varying in physical state and fat content on satiety and energy intake. Appetite 1993; 21: 273-278 Jordan HA, Levitz LS, Utgoff KL, Lee HL. Role of food characteristics in behavioural change and weight loss/ Journal American Dietetic Association 1981; 79: 24-29 Martin CK, Anton SD, Walden H, Arnett C, Greenway FL, Williamson DA. Slower eating rate reduces the food intake of men, but not women: implications for behavioral weight control. Behaviour Research and Therapy 2007; 45: 2349-59 McCarthy SN, Robson PJ, Livingstone MB, Kiely M, Flynn A, Cran GW, Gibney MJ. Associations between daily food intake and excess adiposity in Irish adults: towards the development of food-based dietary guidelines for reducing the prevalence of overweight and obesity. Int J Obes 2006; 30(6):993-1002 Rolls BJ, Bell EA, Waugh BA. Increasing the volume of a food by incorporating air affects satiety in men. American Journal of Clinical Nutrition. 2000; 72: 361-368

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
UNESDA	5.2. Sugars	References linked to submitted UNESDA comments on 5.2.7 Dental Caries Anderson CA, Curzon ME, Van Loveren C, Tatsi C, Duggal MS.Sucrose and dental caries: a review of the evidence. Obes Rev. 2009; 10 (Suppl 1):41-54. Burt BA and Pai S. Sugar consumption and caries risk: a systematic review. J. Dent. Educ. 2001; 65,:1017-1023. Forshee RA, Storey ML. Evaluation of the association of demographics and beverage consumption with dental caries. Food and Chemical Toxicology 42 (2004) 1805–1816 Kinane D, Ritchie C, Toner C. Healthy Mouth, Healthy Body. ILSI North America, 2009. Lader D,Chadwick B, Chestnutt I, Harker R, Morris J, Nuttall N, Pitts N, Steele J, White D. Children's Dental Health in the United Kingdom, 2003. Office for National Statistics: March 2005. Marshall TA, Levy SM, Broffitt B, Warren JJ, Eichenberger-Gilmore JM, Burns TL, Stumbo 1982 PJ, 2003. Dental caries and beverage consumption in young children. Pediatrics. 112(3 Pt1), e184-191. Moynihan P and Petersen PE, 2004. Diet, nutrition and the prevention of dental diseases. Public Health Nutr 2004; 7(1A): 201-226. Navia JM. Carbohydrates and dental health. Am. J. Clin. Nutr 1994; 59: 719S-727S Van Loveren. Diet and dental caries: cariogenicity of foods may depend more on oral hygiene using fluorides than on diet or type of carbohydrates. Eur J Paediat Dentistry 2000; 2:55-62. Van Loveren. Oral and Dental Health. Prevention of dental caries, erosion, gingivitis and periodontitis. ILSI Europe Concise Monographies Series 2009.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
University Medical Center Groningen	5.3. Dietary fibre	5. Criteria on which to base the dietary reference values 5.3.2. Dietary Fiber – Type 2 diabetes mellitus line 1181 To me it is not clear how the relevant studies were retrieved and what were the inclusion criteria. In this paragraph the review of de Munter et al 2007 is cited. However, a Cochrane systematic review on the same topic is not cited. Priebe MG, van Binsbergen JJ, de Vos R, Vonk RJ, Whole grain foods for the prevention of type 2 diabetes mellitus. Cochrane Database of Systematic Reviews 2008, Issue 1. Art. No.: CD006061. DOI: 10.1002/14651858.CD006061. I expect that recommendations of dietary reference values for carbohydrates and dietary fibre are based on all available evidence and wonder why this review is not taken into account.
University Medical Center Groningen	5.3. Dietary fibre	5. Criteria on which to base the dietary reference values 5.3.2. Dietary Fiber – Glucose tolerance and insulin sensitivity line 1079 It is stated that a few intervention studies have investigated the effects of dietary fiber intake on GT or IS but only one intervention study is mentioned. In this paragraph furthermore one cohort study and two cross-sectional studies are cited to substantiate the conclusion. We recently conducted a systematic review retrieving all human intervention trials investigating the effect of cereal fiber on glucose tolerance and insulin sensitivity (Priebe MG and Vonk RJ; submitted) and found eight trials; none of which are included in this report. To me it is therefore not clear how the relevant studies were retrieved and what were the inclusion criteria. It is furthermore not clear how the strength of evidence from cross-sectional studies, prospective cohort studies and randomized controlled trials was weight and contributed to the decision. I expect that recommendations of dietary reference values for carbohydrates and dietary fibre are based on all available evidence and wonder why only a sub-selection was used.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
University Medical Center Groningen	5.4. Glycemic index and glycemic load	5. Criteria on which to base the dietary reference values 5.4.1. Glycemic index and glycemic load – glucose tolerance and insulin sensitivity line 1332 It is stated that few intervention studies have investigated the role of GI or GL in healthy subjects on GT and IS and three intervention trials are mentioned. We recently conducted a systematic review (Priebe MG and Vonk RJ; submitted) retrieving all human intervention trials investigating the effect of the glycemic index on glucose tolerance and insulin sensitivity and found another seven trials none of which are included in this report. To me it is therefore not clear how the relevant studies were retrieved and what were the inclusion criteria. I expect that recommendations of dietary reference values for carbohydrates and dietary fibre are based on all available evidence and wonder why these studies are not taken into account.
VBZ (Association of the Dutch Bakery and Confectionary Industry)	2. Definition/category	We have a question about the definition of fibre in the Summary: line 28-32. We would also like to react on the Summary, but because this isn"t possible we react in general. Please use this comment also for the Summary. Why isn"t the new definition of fibre, as agreed in Commission Directive 2008/100/EC, used in this Scientific opinion? This definition is: For the purposes of this Directive “fibre” means carbohydrate polymers with three or more monomeric units, which are neither digested nor absorbed in the human small intestine and belong to the following categories: — edible carbohydrate polymers naturally occurring in the food as consumed; — edible carbohydrate polymers which have been obtained from food raw material by physical, enzymatic or chemical means and which have a beneficial physiological effect demonstrated by generally accepted scientific evidence; — edible synthetic carbohydrate polymers which have a beneficial physiological effect demonstrated by generally accepted scientific evidence.’
World Health Organization	1. Introduction	Overall the document, whilst attempting to lay down important guidelines for carbohydrate intakes, applies uneven standards to the evidence. This is most evident in the sections on sugars and body weight (5.2.1) and fibre and body weight (5.3.5). The section on sugars gives most cause for concern. The section on dietary fibre fails to address the role of oligosaccharides, which are included as part of the definition in the document. 2.1.2 Dietary fibre This section does not consider the recently updated definitions.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		The EC has defined fibre (Commission Directive 2008/100/EC of 28th October 2008) as: "For the purposes of this Directive "fibre" means carbohydrate polymers with three or more monomeric units, which are neither digested nor absorbed in the human small intestine and belong to the following categories: — edible carbohydrate polymers naturally occurring in the food as consumed; — edible carbohydrate polymers which have been obtained from food raw material by physical, enzymatic or chemical means and which have a beneficial physiological effect demonstrated by generally accepted scientific evidence; — edible synthetic carbohydrate polymers which have a beneficial physiological effect demonstrated by generally accepted scientific evidence.' The Codex (CCNFSDU) subsequently agreed a definition of dietary fibre in 2008 as: "Dietary fibre means carbohydrate polymers1 with ten or more monomeric units2 , which are not hydrolysed by the endogenous enzymes in the small intestine of humans and belong to the following categories: • Edible carbohydrate polymers naturally occurring in the food as consumed, • carbohydrate polymers, which have been obtained from food raw material by physical, enzymatic or chemical means and which have been shown to have a physiological effect of benefit to health as demonstrated by generally accepted scientific evidence to competent authorities, • synthetic carbohydrate polymers which have been shown to have a physiological effect of benefit to health as demonstrated by generally accepted scientific evidence to competent authorities" These definitions are broadly similar, but the Codex definition specifically excludes oligosaccharides, and also lignin. It should be noted the differences between naturally occurring dietary fibre, for which the health benefits are great and synthetic fibres which may be added to food for which the evidence of health benefit is largely limited to relatively short-term studies on biomarkers. In addition, the issues related to oligosaccharide has not been clarified. There is also no clear evidence of health benefit of these (largely synthetic) CHO which in Europe are regarded as fibre. For both definitions, it is important to emphasize that it is "Edible carbohydrate polymers naturally occurring in food as consumed" for which the epidemiological evidence points to a health benefit.
World Health Organization	2. Definition/category	Overall the document, whilst attempting to lay down important guidelines for carbohydrate intakes, applies uneven standards to the evidence. This is most evident in the sections on sugars and body weight (5.2.1) and fibre and body weight (5.3.5). The section on sugars gives most cause for concern. The section on dietary fibre fails to address the role of oligosaccharides, which are included as part of the definition in the document.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		2.1.2 Dietary fibre This section does not consider the recently updated definitions. The EC has defined fibre (Commission Directive 2008/100/EC of 28th October 2008) as: "For the purposes of this Directive "fibre" means carbohydrate polymers with three or more monomeric units, which are neither digested nor absorbed in the human small intestine and belong to the following categories: — edible carbohydrate polymers naturally occurring in the food as consumed; — edible carbohydrate polymers which have been obtained from food raw material by physical, enzymatic or chemical means and which have a beneficial physiological effect demonstrated by generally accepted scientific evidence; — edible synthetic carbohydrate polymers which have a beneficial physiological effect demonstrated by generally accepted scientific evidence.' The Codex (CCNFSDU) subsequently agreed a definition of dietary fibre in 2008 as: "Dietary fibre means carbohydrate polymers1 with ten or more monomeric units2 , which are not hydrolysed by the endogenous enzymes in the small intestine of humans and belong to the following categories: • Edible carbohydrate polymers naturally occurring in the food as consumed, • carbohydrate polymers, which have been obtained from food raw material by physical, enzymatic or chemical means and which have been shown to have a physiological effect of benefit to health as demonstrated by generally accepted scientific evidence to competent authorities, • synthetic carbohydrate polymers which have been shown to have a physiological effect of benefit to health as demonstrated by generally accepted scientific evidence to competent authorities" These definitions are broadly similar, but the Codex definition specifically excludes oligosaccharides, and also lignin. It should be noted the differences between naturally occurring dietary fibre, for which the health benefits are great and synthetic fibres which may be added to food for which the evidence of health benefit is largely limited to relatively short-term studies on biomarkers. In addition, the issues related to oligosaccharide has not been clarified. There is also no clear evidence of health benefit of these (largely synthetic) CHO which in Europe are regarded as fibre. For both definitions, it is important to emphasize that it is "Edible carbohydrate polymers naturally occurring in food as consumed" for which the epidemiological evidence points to a health benefit.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
World Health Organization	5. Criteria (endpoints) on which to base the dietary reference values	5.2 Sugars This section disregards all the evidence and the outcomes of scientific work including the 2002 WHO/FAO Expert Consultation on diet, nutrition and the prevention of chronic diseases and the 2007 FAO/WHO Scientific Update on CHO in human nutrition as well as the conclusions of the very recent report from the American Heart Association (Circulation 2009, 120: 1011-1020) which particularly emphasizes the contribution of sugar sweetened beverages to the increased risk of obesity. The Draft Opinion cites Malik (2006) as saying “that large cross-sectional studies and well-powered prospective cohort studies with long periods of follow-up show a positive association between higher intakes of sugar-sweetened beverages and weight gain and obesity in both children and adults.” and Vatanian’s 2007 systematic review which concludes “We found clear associations of soft drink intake with increased energy intake and body weight.” and “Recommendations to reduce population soft drink consumption are strongly supported by the available science”. However, the Draft Opinion has chosen to dismiss all the evidence, saying that “available data are insufficient”.. The Draft Opinion is also dismissive of an effect of sugars on energy density and also the use of energy density as a useful surrogate for the risk of obesity. The review relating to determinants of obesity carried out for the 2nd World Cancer Research Fund"s Report on "Food, Nutrition, Physical Activity, and the Prevention of Cancer" which is arguably the most comprehensive systematic review of its kind, identified energy density as an important determinant of obesity. The fact that in cross sectional studies, intake of sugars is not a determinant of energy density of the diet does not preclude the contribution that a high content of sugars may make to the energy density of increasingly consumed manufactured and prepared foods. Furthermore, the Draft Opinion does not adequately take into account the potential adverse metabolic effects of sugars (especially fructose) in those with the constellation of abnormalities described as the "metabolic syndrome". Given the high frequency of the "metabolic syndrome" in European populations, this is an important consideration. Furthermore, the proposed recommendations on fibre and sugars are not compatible with current guidelines for the nutritional management and prevention of diabetes published by the EASD Study Group (Mann JI, De Leeuw I, Hermansen K et al. (2004) Nutr Metab Cardiovasc Dis 14: 373-394) which is currently being updated. 5.2.7 Dental caries The arguments here are overwhelmingly in support of limiting the frequency of sugary food intakes, yet the evidence is dismissed again by saying "cariogenic carbohydrate exposure is modified by various other lifestyle factors (oral hygiene, exposure to fluoride, meal frequency and diet composition), heredity, illness, medication, malnutrition, and flow and composition of saliva”. But controlling sugar intake is one of the best ways to reduce caries. 5.3 Dietary fibre.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
		As mentioned above, there is a problem with the evidence in that the EC definition of fibre includes oligosaccharides. None of the population studies cited by the Draft Opinion in support of the benefits of fibre has measured oligosaccharides intakes and it is therefore difficult to separately analyse the effect of the two carbohydrate components.
WSRO	2. Definition/category	265-269 The hypothetical distinction between intrinsic and extrinsic sugars has no practical utility since intrinsic sugars are rendered extrinsic by mastication or by cooking. Consequently no valid method of analytical measdurement of these two "categories" of sugars exsits. Furthermore, the choice of words here implies that sugar as normally sold is not a food. This is as illogical as refusing to call flour or cooking oil foods.
WSRO	2. Definition/category	403-405 The form of words here is unhelpful. The fact is that earlier assumptions that the rate of absorption of sucrose was more rapid than starches probved to be wrong. The reasons for this error are not "food related" but more to do with prejudice.
WSRO	2. Definition/category	418-420 (and 419-423) the major influence on the blood glucose response to a carbohydrate load is inter- and intra- individual"s variations in responsiveness. See Wolever TMS "Physiological machanisms and observed health impacts related to the glycaemic indes: some observations". International Journal of obesity (2006) 30: S72-S78. Given the variation in response seen among normal individuals, the likely range of apparent GI for a given food in the general population, which will include varying degrees of insulin resistance, will be extremely wide. this is quite apart from the alterations in response due to concurrent consumption of fat, protein or fibre, and from second meal effects. Thus the reliability that can be placed on either GI or GL (lines 419-423) estimations as predictors of any physiological or pathalogical outcome is limited
WSRO	4. Overview of dietary refernce values and recommendations	580-587 and 600-607 It should be mentioned that the Health Council of The Netherlands and the German, Austrian and Swiss Nutritions Societies consciously did not make any recommendations for sugars "added" or otherwise.
WSRO	4. Overview of dietary refernce values and recommendations	615-616 It should be noted that the WHO/FAO report assert that a high intake of sugars is associated with "decreased nutrient density, and risk of weight gain, especially when consumed as beverages". However, no evidence is cited in support of this general claim and the comment on beverages is supported only by weak and conflicting eveidence. There is certainly no evidence that any of these effects are seen immediately above a 10% of energy intake level. It would be fairer to say that the "basis claimed for this goal was....."

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
WSRO	5. Criteria (endpoints) on which to base the dietary reference values	854-882 While broadly agreeing with this section, I am uncomfortable with the conclusion. The major determinant of micronutrient intake is the chioce of foods eaten, whether or not these contain sugars is largely irrelevant. The phraseology here is ambiguous and could be taken to mean that the choice of foods that contribute most sugar to the diet are intrinsically nutrient poor, and that it is this that results in some observations of an inverse association between micronutrient intake and sugar consumption. this is a common prejudice that does not fit the data. In particular these inverse associations are commonly so weak as to be practically meaningless. The key is not whether an individual consumes more or less sugar but how varied their diet is.
WSRO	5.2. Sugars	1060-1064 The issue of frequency is a key confounder of many of the epidemiological studies cited and should be further considered. The key evidence of the Vipeholm studies should be included in any complete review of this controversial area.
WSRO	5.2. Sugars	1065-1071 A further confounder to those mentioned is consumption of sugar-containing fruits and fruit juices. The presumption that these are safe for teeth is not borne out by experimental demineraliztion studies. It should therefore be made clear that a healthy diet, which must contain fruit consumption, will not be safe for the teeth if feeding patterns include frequent meals and snacks that include fruit. Dietary manipulation of any sort is not a reliable means of preventing caries, whereas flouride toothpaste use is (Kay EJ (1998) Caries prevention : based on evidence? Or an act of faith?. British Dental Journal 185:432-3).
WSRO	5.2. Sugars	1478-1481 in addition to the reservations expressed in the text as to the significance of the "negative associations between nutrient density and intake of added sugars", it should also be noted that these associations are weak and inconsistent. Please see: Rennie KL and Livingstone MBE (2007) “Associations between dietary added sugar intake and micronutrient intake: a systematic review”. British Journal of Nutrition. 97: 832-841; and Forshee RA and Storey ML (2001) The role of added sugars in the diet quality of children and adolescents. Journal of the American College of Nutrition 20(1):32-43.
WSRO	5.2. Sugars	1481-1489 I agree that the available evidence does not allow the setting of a UL for total (or added) sugars. However, the reference here to intakes<20% possibly giving rise to adverse effects conflicts with the IOM report (Food and Nutrition Board, Institute of Medicine, National Academy of Sciences 2002 "Dietary reference intakes for energy, carbohydrates, fiber, fat, protein and amino acids". National Academic Press.USA.) without any clear evidence being cited to justify this new figure. In light of the significance likely to be placed on this "20%" estimate it should be thoroughly justified or removed.
WSRO	5.2. Sugars	883-987 and Annex 4 The CARMEN study by Saris et al should be included here as it reports long term impact on fasting glucose and insulin of a high sucrose ad libitum diet.

ORGANISATION	CHAPTER TEXT	COMMENT TEXT
WSRO	5.2. Sugars	992-997 The evidence on sugar-containing beverages and body weight is less extensive and less consistent than these conclusions imply. See Pereira MA (2006) "The possible role of sugar-sweetened beverages in obesity etiology: a review of the evidence". International Journal of Obesity 30: Supplement 3 S28-S36.
WSRO	Conclusions and recommendations	1515-1517 This conclusion is thoroughly reasonable, in light of the lack of consistent evidence of adequate quality on which to base an UL, andAI or a recommended intake range. May I respectfully suggest that his conclusion should be consistently reflected in all other EFSA opinions on relevant topocs, including labelling issues.